

# TC-V70WR/V710WR

## SERVICE MANUAL



PHOTO : TC-V70WR

'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

TC-V70WR :

*US Model  
Canadian Model  
AEP Model  
UK Model  
E Model*

TC-V710WR :

*AEP Model  
UK Model  
E Model*

TC-V70WR are a stereo double cassette deck in LBT-V70WR, respectively.

Tape Transport Mechanism Type	DECK A	TC-CMFYA2
	DECK B	TC-CMFYB2

### SPECIFICATIONS

#### TC-V70WR

Recording system 4-track 2-channel stereo

Frequency response

DOLBY NR OFF (DIN)

With TYPE IV cassette

(Sony METAL-ES)

30 - 15,000 Hz ( $\pm 3$  dB)

With TYPE II cassette (Sony UCX-S)

30 - 14,000 Hz ( $\pm 3$  dB)

With TYPE I cassette (Sony HF-S)

30 - 13,000 Hz ( $\pm 3$  dB)

Wow and flutter 0.08% WRMS (NAB)

0.2% (DIN)

Dimensions Approx. 355 x 120 x 275 mm (w/h/d)  
(14 x 4 $\frac{3}{4}$  x 10 $\frac{7}{8}$  inches)

incl. projecting parts and controls

Weight Approx. 4 kg (8 lb 14 oz) net

#### TC-V710WR

Recording system

4-track 2-channel stereo

Fast-forward and rewind time

Approx. 90 sec. (with C-60 cassette)


Bias frequency 105 kHz

Signal-to-noise ratio (NAB, at peak level)


Cassette \ Dolby NR switch			
	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UCX-S)	57 dB	64 dB	70 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

— Continued on page 2 —

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



STEREO DOUBLE CASSETTE DECK  
**SONY**

TC

Total harmonic distortion	1.0 % (with Sony METAL-ES cassette)
Frequency response	DOLBY NR OFF <ul style="list-style-type: none"> <li>•With TYPE IV cassette (Sony METAL-ES)             <ul style="list-style-type: none"> <li>20 — 16,000 Hz</li> <li>30 — 15,000 Hz (±3 dB)</li> <li>30 — 13,000 Hz (±3 dB, 0 VU recording)</li> </ul> </li> <li>•With TYPE II cassette (Sony UCX)             <ul style="list-style-type: none"> <li>20 — 15,000 Hz</li> <li>30 — 14,000 Hz (±3 dB)</li> </ul> </li> <li>•With TYPE I cassette (Sony HF-S)             <ul style="list-style-type: none"> <li>20 — 14,000 Hz</li> <li>30 — 13,000 Hz (±3 dB)</li> </ul> </li> </ul>
Wow and flutter	0.08 % WRMS (NAB) ±0.2 % (DIN)
Inputs	Line inputs (phono jacks) <ul style="list-style-type: none"> <li>Sensitivity 77.5 mV (–20 dB)</li> <li>Input impedance 47 kilohms</li> </ul>
Outputs	Line outputs (phono jacks) <ul style="list-style-type: none"> <li>Output level 0.44 V (–5 dB) at load impedance 47 kilohms</li> <li>Load impedance over 10 kilohms</li> </ul> Headphone output (stereo phone jack) <ul style="list-style-type: none"> <li>Output level –28 dB at a load impedance of 8 ohms</li> </ul>
<b>General</b>	
Power requirements	AEP model: 220 V ac (240 V ac adjustable by authorized Sony personnel) UK model: 240 V ac (220 V ac adjustable by authorized Sony personnel) E model: 120, 220 or 240 V ac adjustable
Power consumption	23 watts
Dimensions	Approx. 355 × 120 × 270 mm (w/h/d) (14 × 4¾ × 10¾ inches) including projecting parts and controls
Weight	Approx. 4.7 kg (10 lbs 6 oz)

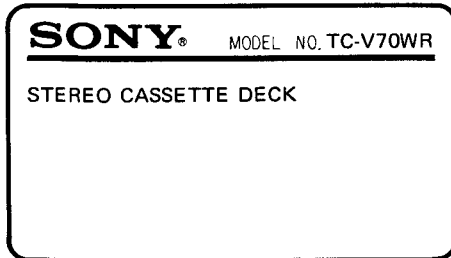
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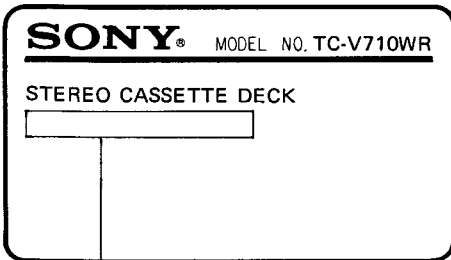
## MODEL IDENTIFICATION

— Specification Label on Jack Plate —

### TC-V70WR



### TC-V710WR



AEP model : 220V~50/60Hz 23W  
 UK model : 240V~50/60Hz 23W  
 E model : 120, 220, 240V~50/60Hz 23W

## SAFETY CHECK-OUT (US Model)

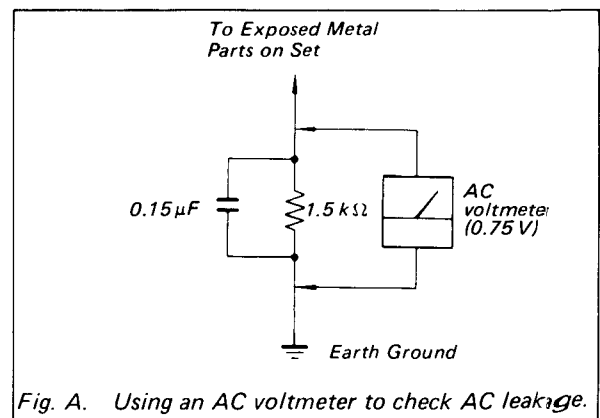
After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

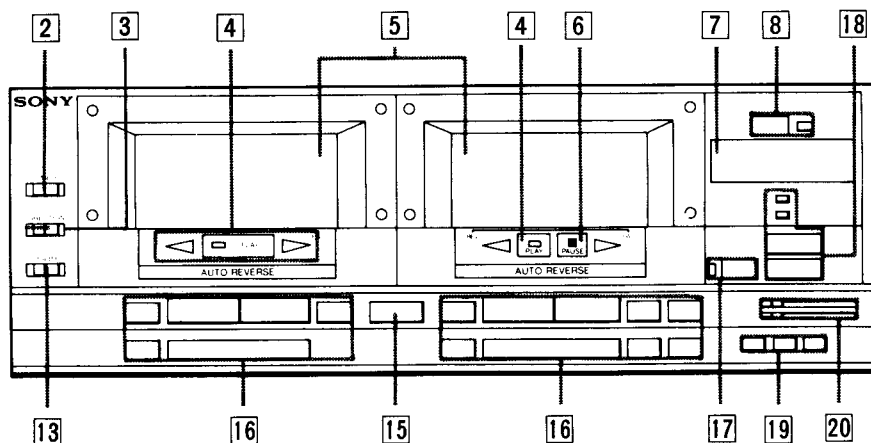
1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



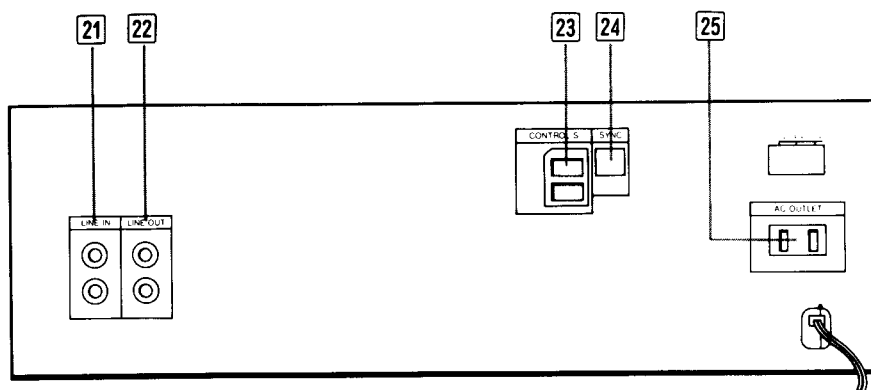
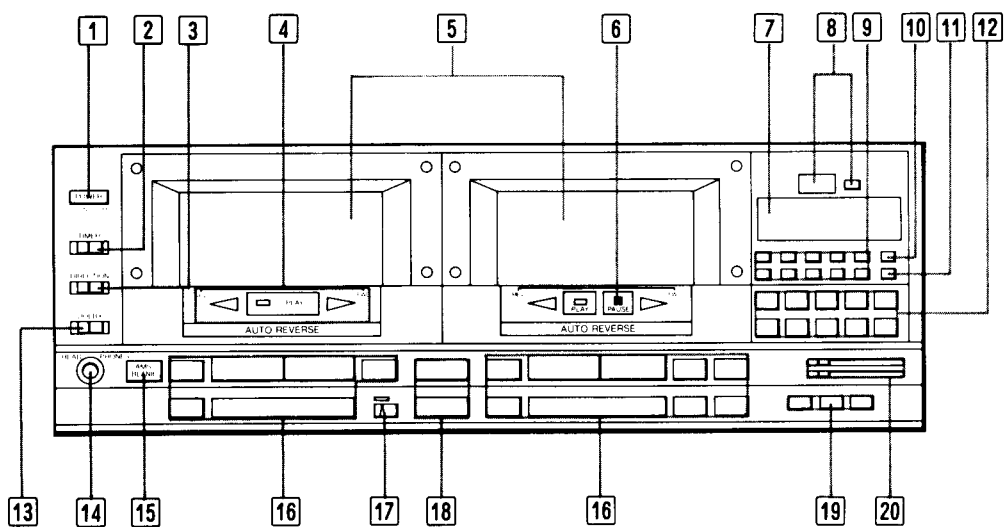
# TC-V70WR/V710WR

## FUNCTION OF CONTROLS

### TC-V70WR



### TC-V710WR





## 1 POWER switch (TC-V710WR)

This turns the power on or off.

## 2 TIMER switch (deck B)

You can set the unit to record or playback at a predetermined time by connecting any commercially available timer.

## 3 DIRECTION MODE switch

Set this switch to select the mode of tape movement.

⇒ (one-direction): To record or play back one side of the cassette.

↔ (one-cycle): To record or play back both sides of the cassette once. If the switch is set to this position when the reverse side of the cassette is being recorded or played back, the tape will stop at the end of that side.

↔ (continuous-cycle): To record on both side of a cassette or to repeat playback of both sides endlessly.

## 4 Tape operation mode indicators

◀ REV indicator

■ PLAY indicator

▶ FWD indicator

## 5 Cassette holders

## 6 ■ PAUSE indicator

Illuminates when the ■ button is pressed. When the power is supplied, the indicator flickers for a few seconds in standby mode.

## 7 PEAK LEVEL METERS

These meters show the peak input level of each channel during recording, and recorded levels during playback. The left-most LED of each meter lights when the power is turned on.

## 8 TAPE COUNTER and reset button (deck B)

The tape counter provides a numerical reference point. To reset to zero, press the reset button.

## 9 RMS indicators (TC-V710WR)

## 10 RMS CLEAR button (TC-V710WR)

Press this button to clear the memory contents of RMS function.

## 11 RMS CHECK button (TC-V710WR)

Press this button to check the memory contents of RMS function.

## 12 RMS buttons (TC-V710WR)

Press numbered button to memorize your selections in a cassette tape. The corresponding indicators will light up.

## 13 DOLBY NR switch

Select the Dolby NR\* (Noise Reduction) system to be used for recording or playback.

**OFF:** To record or play back without the Dolby NR process.

**B:** To record or play back with the Dolby B-type NR process.

**C:** To record or play back with the Dolby C-type NR process.

\* Dolby and the double-D symbol are trade marks of the Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

## 14 HEADPHONES jack

## 15 AMS/BLANK SKIP button

Press to activate the AMS(Automatic Music Sensor) and blank skip function on decks A and B. To deactivate, press the button again.

## 16 Tape operation buttons

▲ (eject) button

◀◀ (fast-reverse) button

◀ (reverse play) button

■ (stop) button

▶ (forward) button

▶▶ (fast forward) button

● (record) button (deck B)

To start recording, keeping this button pressed, press the ▶ or ◀ button.

○ (record muting) button (deck B)

■ (pause) button (deck B)

Press to stop the tape momentarily during recording or playback. To disengage pause mode, press it again.

## 17 AUTO PAUSE button and indicator

Press this button when editing in normal speed dubbing.

## 18 Dubbing speed buttons and indicators

**HIGH SPEED:** Press for high speed dubbing.

**NORMAL SPEED:** Press for normal speed dubbing.

## 19 TAPE SELECT buttons (deck B)

Press one of these buttons to select the type of cassette to be used.

**NORMAL:** For normal tapes.

**CrO<sub>2</sub>:** For CrO<sub>2</sub> tapes.

**METAL:** For metal tapes.

Tape type	TAPES (C46-C90)
TYPE I (NORMAL)	SONY: HF, EF, CHF, HF-S Other TYPE I equivalent tapes (For 120 μs and NORMAL BIAS)
TYPE II (CrO <sub>2</sub> )	SONY: UCX, UCX-S, UX, UX-S, UX-ES, UX-PRO Other TYPE II equivalent tapes (For 70 μs and HIGH BIAS)
TYPE IV (METAL)	SONY: METAL-ES Other TYPE IV equivalent tapes (For 70 μs and METAL BIAS)

## **[20] REC LEVEL (recording level) controls**

Adjust the recording level by observing the PEAK LEVEL METERS.

## **[21] LINE IN (line inputs) jacks (phono jack)**

Accepts tape outputs of an amplifier for tape recording and line outputs of another tape deck when duplicating a tape from that unit.

## **[22] LINE OUT (line outputs) jacks (phono jack)**

Accepts tape inputs of an amplifier for playing back a tape and line inputs of another tape deck for duplicating a tape onto that unit.

The signal is not output at LINE OUT jacks even when the ● key is pressed.

## **[23] CONTROL S connectors**

**IN:** Use this connector for total audio system remote control. For details, refer to the Operating Instructions of the optional Sony AVH-910 audio/video selector.

**OUT:** Use this connector for total audio system remote control. For details, refer to the Operating Instructions of the optional Sony AVH-910 audio/video selector.

## **[24] SYNC connector**

For synchro recording, connect to the SYNC connector of the turntable system. For further details, refer to the instruction manual of the Sony turntable system PS-LX910.

## **[25] AC OUTLET (unswitched)**

This ac outlet is not controlled by the POWER switch. Connect an audio component whose total power consumption is less than 100 watts.

### **Note**

The unswitched socket outlets remain live, independently of power switch setting, at all times when the unit is connected to the mains supply.

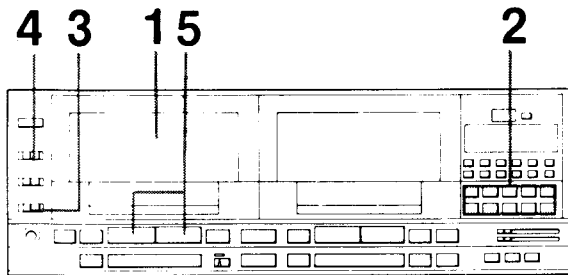
## **FEATURES**

- Double-reverse system with deck A for playback only and deck B for recording/playback.
- RMS (Random Music Sensor) editing/dubbing for deck B and RMS playback function for deck A. (TC-V710WR)
- Tape dubbing function with two speeds available (HIGH and NORMAL)
- AMS (Auto Music Sensor)/BS (Blank Skip) function (for both decks) to facilitate easier editing
- AUTO PAUSE function for making an original music tape of your own
- QUICK REVERSE function for deck B.
- DOLBY B/C type noise reduction system.
- Relay playback function to perform continuous play on deck A and B
- Wireless remote control function (with CONTROL S IN/OUT terminal) (TC-V710WR)
- Synchronized remote control available (TC-V710WR)
- Auto Tape Selector for automatically identifying the type of tape used (deck A)

## TAPE PLAYBACK (deck A or B)

### RMS PLAY(Deck A) Random Music Sensor (TC-V710WR)

This function allows you to play your favorite selections in a desired order by detecting blank between selections.



- 1 Insert a recorded cassette into the deck A.
- 2 Press the RMS buttons according to your selection.  
The corresponding indicators will light up.
- 3 Set the DOLBY Switch to the appropriate position.
- 4 Set the DIRECTION MODE switch to the appropriate position.
- 5 To play back the front side: Press the ► button.  
To play back the reverse side: Press the ◀ button.
- 6 Adjust the volume of the amplifier.

#### To check the memorized selections

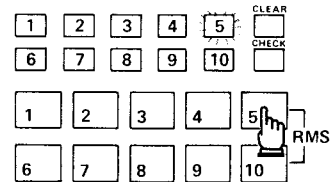
Press the RMS CHECK button. The indicator illuminates in the order of selection.

#### To clear the memorized selections

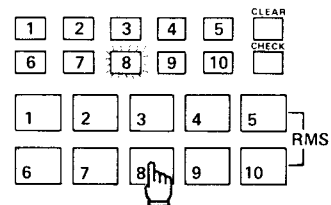
Press the RMS CLEAR button.

Ex. To play the selections No. 5, 8 and 3.

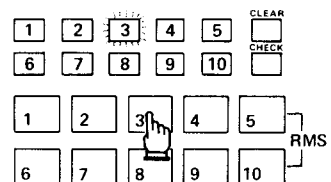
Press [5].



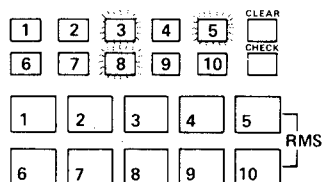
Press [8].



Press [3].



The selections No.5, 8 and 3 have been memorized and the corresponding indicators light up.

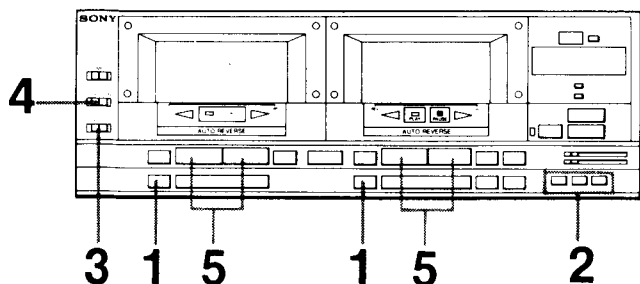


#### Note

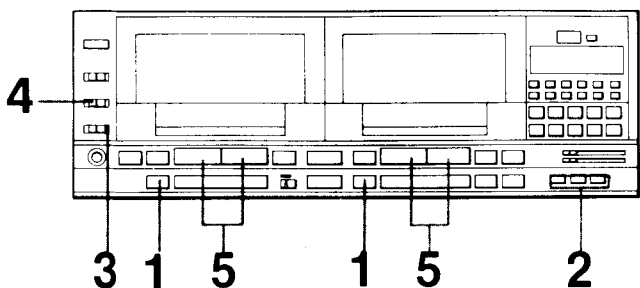
Do not press the ◀ or ► button on deck B during RMS operation on deck A. If you do so, RMS play may malfunction.

## RELAY PLAY (from deck A to B or B to A)

(TC-V70WR)



(TC-V710WR)



### To relay playback only one side

After playing the side selected for deck A (or deck B), the side of the other deck which is indicated by the tape operation mode indicator (◀ or ▶) will be played and then stopped.

### To relay playback on both sides

After playing the both sides of deck A (or deck B) (or when the ▶ button is pressed, after playing one side only), the front side and the reverse side of the other deck will be played in that order.

This operation is repeated when relay playback continuously on both sides is selected.

### More than 3 tapes can be played back continuously.

When this is done, replace the reproduced tape with new one.

#### Note

- Be sure to set the TIMER switch OFF before turning ON the power.
- Once the relay playback is stopped, this function will be reset.  
To resume this function, press the ■ button on either deck and start again.
- If either of the decks starts playing with a tape in the other one, relay playback may be excuted.

- 1 Press the ▲ button of both decks and insert a recorded cassette into both cassette holders.
- 2 For deck B, press one of the TAPE SELECT buttons to select the type of cassette to be used.
- 3 Set the DOLBY NR switch to the same position as was used when the cassette was recorded.
- 4 Set the DIRECTION MODE switch to the appropriate position.  
To relay playback on one side: ⇐  
To relay playback on both sides: ⇌  
To relay playback continuously on both sides: ⇄
- 5 Press the ▶ or ◀ button either on deck A or B.  
Relay playback begins.

**AMS PLAY (decks A and B)**

During playback, use the Automatic Music Sensor(AMS) to locate the beginning of the selection being played or the following selection.

**During playback of the front side**

- 1 Press the AMS button. The AMS indicator lights.
- 2 Press the ◀◀ button to repeat the selection being played or press the ▶▶ button to play the next selection.

**During playback of the reverse side**

- 1 Press the AMS button.
- 2 Press the ▶▶ button to repeat the selection being played or press the ◀◀ button to play the next selection.

**Notes on the blank spaces**

- Since AMS works by searching out the blank spaces on a tape, it may not operate if there is noise in the space between selections, or if the space is less than 4 seconds long. The record muting facility of this cassette deck can make a four second blank space that will assure AMS operation on any recorded tape.
- If the recorded music includes a long pause, or if it continues for a time at sufficiently low volume, as may happen for instance with classical music, the AMS will treat it as a blank.
- The AMS can be activated for deck A or B, according to the deck on which the ◀◀ or ▶▶ button is pressed first.

**BLANK SKIP (decks A, B)**

Press the AMS/BLANK skip button to let the cassette deck automatically go into fast-forward mode where there is a blank about 10 seconds long or more. Playback begins when a new selection begins.

**Note**

The blank skip function can be activated for deck A prior to deck B.

If the ◀◀ or ▶▶ key of deck A is pressed while the other deck is in blank skip playback mode, the blank skip operation is interrupted.

When the beginning of the selection is located, deck B goes into blank skip mode.

**QUICK REVERSE (deck B)**

When the recording or playback on the front side is finished, the quick reverse sensor will detect the leader tape and change to the other side. Therefore, recording or playback without any interrupt can be done. (Quick reverse does not work from the reverse side to the front side.)

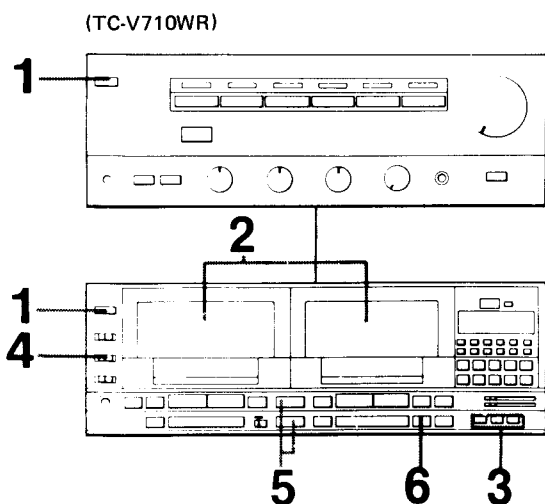
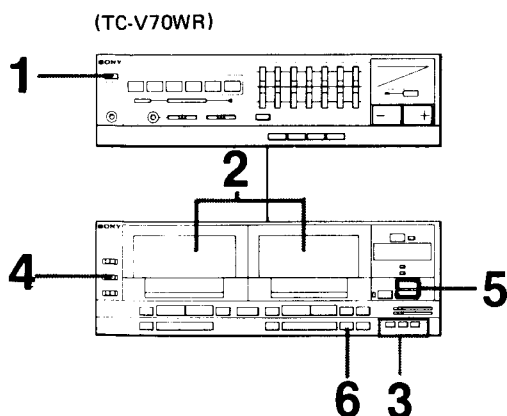
**Note**

Do not expose the cassette holder to strong light such as direct sunlight while recording or playback. If the sensor in the head unit receives such strong light, the quick reverse function may work erroneously.

## TAPE DUBBING (from deck A to deck B)

### AUTO DUBBING

Deck B automatically begins to record when deck A begins playback. Recording level adjustment and Dolby NR setting are not necessary.



- 1 Press the POWER switches.
- 2 Insert a recorded cassette into deck A and the cassette to be dubbed into deck B.
- 3 For deck B, press one of the TAPE SELECT buttons to select the type of cassette to be used.

- 4 Set the DIRECTION MODE switch to the appropriate position.  
For one side dubbing using the tapes with the same length:   
For both side dubbing using the tapes with different length:   
For both side dubbing using the tapes with the same length:

- 5 Press the DUBBING button.

For normal speed dubbing: NORMAL SPEED  
(completion and high quality)  
For high speed dubbing: HIGH SPEED  
(time saving)

- 6 Press the button. Dubbing begins.

To stop the dubbing, press the button of deck B. When the tape of deck A or B reaches the end, both decks shut off automatically.

### Notes

- The DUBBING button is activated only when both decks A and B are in stop mode.
- During high speed dubbing, only the button on deck B is operative while the , , , or button on deck A is operative as well as the button on deck B.
- The indicator of the NORMAL SPEED button blinks and auto dubbing does not start.
- During recording or dubbing, the sound is sometimes impaired by a TV set. In this case, move the TV set away from the stereo system.

### AUTO PAUSE

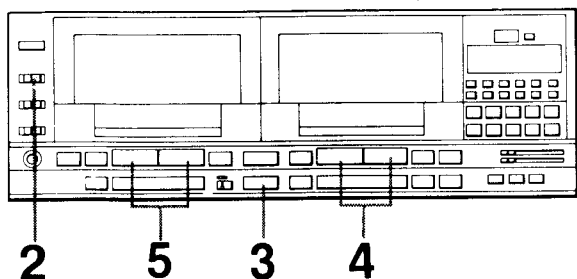
During normal speed dubbing, use the AUTO PAUSE function to stop the deck A and make the deck B REC/PAUSE condition every time a selection on the deck A ends. You can arrange the selections recorded on the tape in the deck A as you want for recording on the tape in the deck B.

- 1 After pressing the NORMAL SPEED button in step 5 of "Auto dubbing", press the AUTO PAUSE button. The AUTO PAUSE indicator lights.
- 2 When the selection on the deck A ends, the deck A will stop and the deck B will be in the REC/PAUSE condition. Then, search a next selection to be recorded by using the or buttons or by AMS function on the deck A.
- 3 Press the button on the deck B to restart the recording. Repeat the above steps as many times as you want.

### Note

This function cannot be activated in HIGH SPEED dubbing mode.

## RMS DUBBING (Deck A for RMS playback/Deck B for recording) (TC-V710WR)



After performing step 4 in "Manual dubbing" proceed as follows.

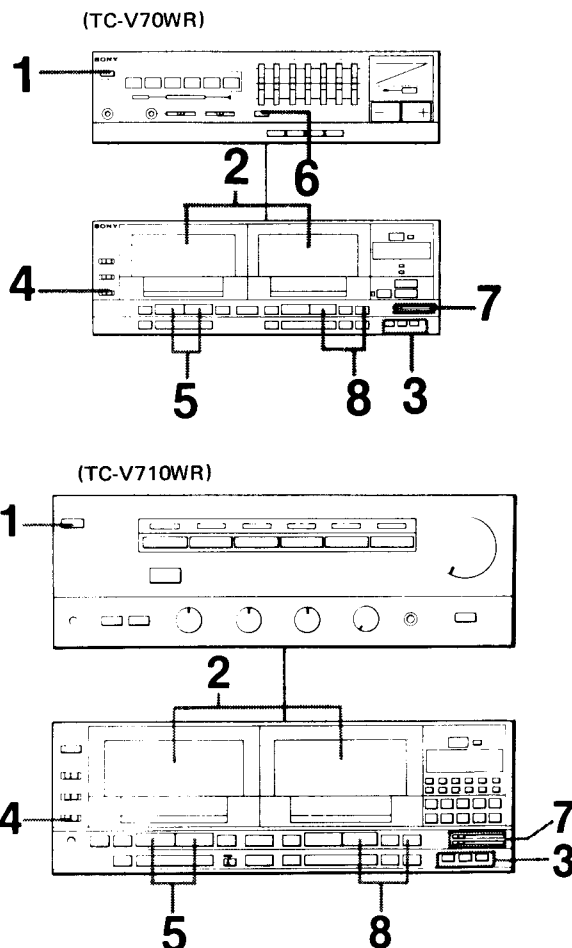
- 1 Select desired selections by the procedure in "RMS play" on page 7.
- 2 Set the DIRECTION MODE switch to the appropriate position.
- 3 Press the NORMAL SPEED button.
- 4 Press the ◀ or ▶ button on deck B to select the side of the cassette to be record.
- 5 Press the ◀ or ▶ button on deck A.  
The tape deck now starts dubbing with RMS function and you can record your selections only on the tape in deck B.

### Note

- While reading between selections, the deck for recording will pause.
- When the deck B is in recording mode, deck A will stop and the RMS function will be reset.

## MANUAL DUBBING

The sound of deck A can be recorded onto deck B with the desired tone quality by adjusting the graphic equalizer controls.




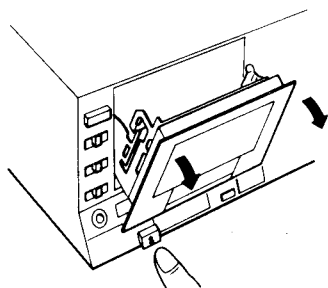
- 1 Press the POWER switch.
- 2 Insert a recorded cassette into deck A and the cassette to be dubbed into deck B.
- 3 For deck B, press one of the TAPE SELECT buttons to select the type of cassette to be used.
- 4 Set the Dolby NR switch to OFF.  
\* The Dolby NR process is not effective on deck B during playback on deck A and recording or playback on deck A. Therefore, it is recommended to record without the process.
- 5 Play back the cassette of deck A.
- 6 Press the EQ switch and adjust the tone with the GRAPHIC EQUALIZER controls.
- 7 Adjust the recording level with the REC LEVEL controls.
- 8 Keeping the ● REC button pressed, press the ▶ button of deck B. Dubbing begins.

## MAINTENANCE

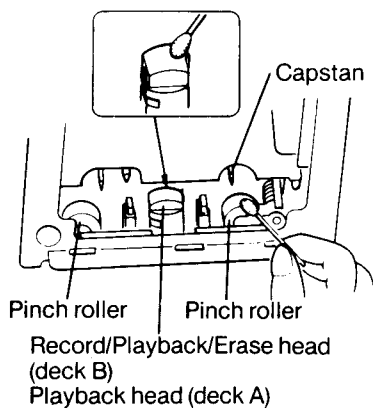
### CLEANING THE HEADS AND TAPE PATH (decks A and B)

Cleaning after every 10 hours of operation. To make the best possible recordings, however, you should clean all surfaces over which the tape travels before every recording.

- 1 Press the  button to open the cassette holder. Remove the window as illustrated.



- 2 Wipe the heads, the pinch roller and the capstan with a cleaning tip slightly moistened with tape cleaning fluid or rubbing alcohol.



- 3 Replace the window.

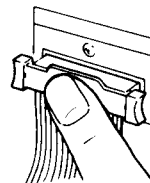
After cleaning the heads and tape path, do not insert a cassette until the areas cleaned are completely dry.

## CONNECTIONS

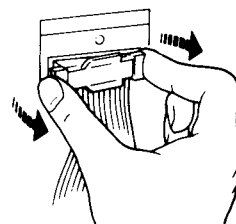
### CONNECTION NOTES (TC-V70WR)

#### Supplied flat cord connection

- Be sure to insert the cord securely.



To disconnect the cord, press the center tab and pull out the connector. Do not pull the cord itself.





## SECTION 1 OUTLINE

### 1-1. CIRCUIT DESCRIPTION

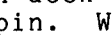
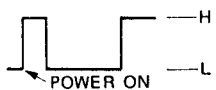







#### IC501

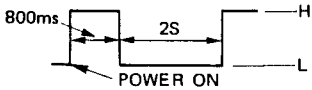
IC501 (M50742-404) is a 4 bit microcomputer which controls the mechanism, does key input and LED display.  
The pin functions, key matrix and LED matrix descriptions follow.


*Table 1. IC 501 Pin Functions*

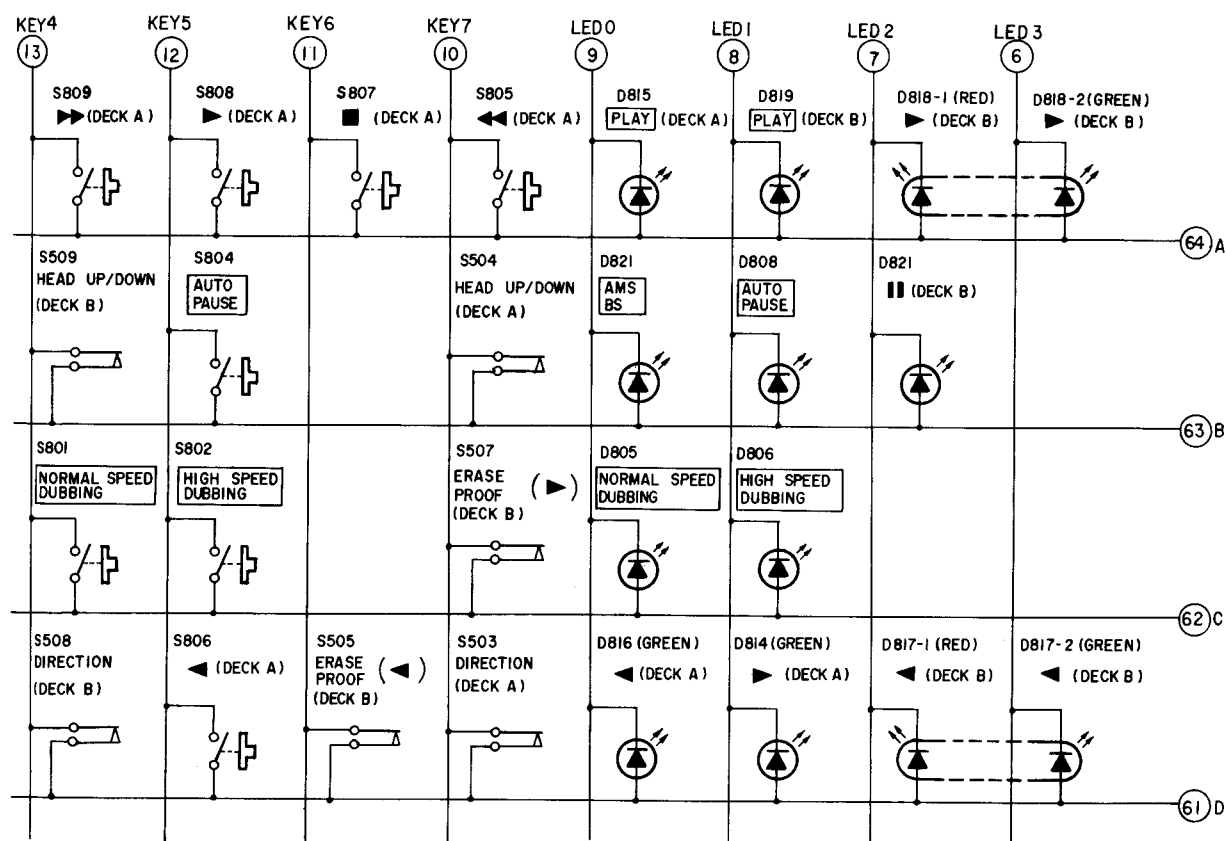
Pin No.	Pin Name	I/O	Function
1	VDD		Power supply pin.
2	$\overline{\text{A-MOTOR(FWD)}}$	O	A deck reel motor (FWD) drive output pin. "L" when A deck reel motor rotates FWD, otherwise "H".
3	$\overline{\text{A-MOTOR(REV)}}$	O	A deck reel motor (REV) drive output pin. "L" when A deck reel motor rotates RVS, otherwise "H".
4	$\overline{\text{B-MOTOR(FWD)}}$	O	B deck reel motor (FWD) drive output pin. "L" when B deck reel motor rotates FWD, otherwise "H".
5	$\overline{\text{B-MOTOR(REV)}}$	O	B deck reel motor (REV) drive output pin. "L" when B deck reel motor rotates RVS, otherwise "H".
6 7 8 9	$\overline{\text{LED3}}$ $\overline{\text{LED2}}$ $\overline{\text{LED1}}$ $\overline{\text{LED0}}$	O	Anode side digit output pins to dynamically light up LED. Refer to LED functions in Figure 1 and Table 2.
10 11 12 13	$\overline{\text{KEY7}}$ $\overline{\text{KEY6}}$ $\overline{\text{KEY5}}$ $\overline{\text{KEY4}}$	I	Key matrix key return signal input pins. Refer to switch functions in Figure 1 and Table 3.
14	$\overline{\text{AMS/BS}}$	I	AMS/BS (blank skip) key input pin.
15	TC STOP	I	Direct function stop signal input pin. "L" when amp function is at "TAPE", "H" otherwise. When "H" is input during playback, stop occurs, but not during recording. (This pin is not used on TC-V710WR.)

16	$\overline{\text{SYNCHRO-II}}$	I	Synchro pause release signal input pin. "L" when synchro pause release signal is input; otherwise "H". Only accepted when B deck is in recording mute or recording pause.
17	$\overline{\text{SYNCHRO-O}}$	I	Synchro recording mute signal input pin. "L" when synchro recording mute signal is input; otherwise "H". Only accepted during B deck recording.
			If 16 $\overline{\text{SYNCHRO-II}}$ and 17 $\overline{\text{SYNCHRO-O}}$ above both input "L" at the same time, remote control AMS/ $\text{O}$ input is judged, and during recording, recording mute operation results, and at other times AMS/BS on/off is done.
18	$\overline{\text{B-}\blacktriangleleft}$	I	B deck $\blacktriangleleft$ key input pin.
19	$\overline{\text{B-}\blacktriangleleft\blacktriangleleft}$	I	B deck $\blacktriangleleft\blacktriangleleft$ key input pin.
20	$\overline{\text{B-}\blacksquare}$	I	B deck $\blacksquare$ key input pin.
21	$\overline{\text{B-}\blacktriangleright}$	I	B deck $\blacktriangleright$ key input pin.
22	$\overline{\text{B-}\blacktriangleright\blacktriangleright}$	I	B deck $\blacktriangleright\blacktriangleright$ key input pin.
23	$\overline{\text{B-}\bullet}$	I	B deck $\bullet$ key input pin.
24	$\overline{\text{B-II}}$	I	B deck $\text{II}$ key input pin.
25	$\overline{\text{B-O}}$	I	B deck $\text{O}$ key input pin.
26	$\overline{\text{POWER OFF}}$	I	Power detection pin. "H" is input for power ON and "L" for power OFF. For power OFF when head is up, the head is lowered immediately.
27	GND	-	Ground pin.
28	$\overline{\text{RST}}$	I	External reset signal input pin. Reset operation is performed for "L" level input.
29 30	XI X0	I O	Clock oscillation pins. (3.58MHz on this model.)
31	CLK	O	Timing signal output pin. Supplies 895kHz clock to RMS controller. (Not used on TC-V70WR.)
32	GND	-	Ground pin.

33	A-SHUT OFF	I	<p>- A deck reel table rotation signal input pin. When a pulse (  ) is input during A deck PB, FF, FR and "H" continues for 2 seconds during PB or 0.5 seconds during FF or FR, shut off occurs.</p> <p>- During power ON Switching input pin for 1 direction/2 direction playback.</p> <p>1 direction playback:</p>  <p>2 direction playback: "H"</p> <p>On this model, fixed to "H" during power ON.</p>
34	B-SHUT OFF	I	<p>B deck reel table rotation signal input pin. When a pulse (  ) is input during B deck PB, recording, FF, FR and "H" continues for 2 seconds during PB or recording or for 0.5 seconds during FF or FR, shut off occurs.</p>
35	$\bar{Q}$	I	<p>B deck leader tape sensor (quick sensor) signal input pin.</p> <p>At leader tape: "L"</p> <p>At magnetic coating: "H"</p> <p>When "L" is input during B deck playback or recording, B deck reverses rotation. However, only operates for from FWD to RVS direction. Also, does not operate for 8 seconds from the start of FWD.</p>
36	 /TIMER REC	I	<p>- Direction mode switching signal input pin. "L" when direction mode is  , otherwise "H".</p> <p>- During power ON TIMER REC signal input pin.</p> <p>TIMER REC: </p> <p>Otherwise: "H"</p>
37	 /TIMER PLAY	I	<p>- Direction mode switching signal input pin. "L" when direction mode is  , otherwise "H".</p> <p>- During power ON TIMER PLAY signal input pin.</p> <p>TIMER PLAY: </p> <p>Otherwise: "H"</p>

38	<u>AMS SIG</u>	I	AMS signal input pin. "H" during recorded portion, "L" during blank.
39 40	<u>BACK</u> <u>GO</u>	I	RMS control signal input pin. Receives "back" or "go" commands from RMS controller during RMS. Both "H" during RMS OFF, both "L" when RMS is set, then after pin 41 <u>REQ</u> output, for "back" command, pin 39 <u>BACK</u> : "L", pin 40 <u>GO</u> : "H". For "go" command, pin 39 <u>BACK</u> : "H", pin 40 <u>GO</u> : "L" are input from RMS controller. Refer to Figure 2 for the timing chart for RMS. (Not used on TC-V70WR.)
41	<u>REQ</u>	O	Output pin for request signal to RMS controller. Outputs "L" to receive command from RMS controller during RMS. See Figure 2 for the RMS timing chart. (Not used on TC-V70WR.)
42	<u>TIMER</u>	O	Timer recording, playback operation output. "L" for two seconds only after reset (0.8 seconds), otherwise "H". 
43	<u>TC FUNCTION</u>	O	Direct function signal output pin. " " when A deck and B deck ▶ or ◀ key is ON, otherwise "H". (Not used on TC-V710WR.)
44	<u>SIRCS MUTE</u>	O	Remote control prohibit signal output pin. "L" during dubbing so that remote control can not operate. Otherwise "H".
45	<u>A-PLAY MONITOR</u>	O	A deck playback monitor signal output pin. "L" during A deck playback to inform RMS controller of playback. "H" at other times. See Figure 2 for RMS timing chart.
46	<u>LINE MUTE</u> <u>RELEASE</u>	O	Line muting release signal output pin. "L" for A deck, B deck playback and during dubbing, "H" at other times.
47	<u>H.P MUTE</u> <u>RELEASE</u>	O	Headphone, meter muting release signal output pin. "L" for A deck playback, B deck playback and recording, and dubbing; otherwise "H".
48	<u>REC MUTE</u> <u>RELEASE</u>	O	Recording muting release signal output pin. "L" during B deck recording and dubbing, otherwise "H".
49	<u>A-RMS MONITOR</u>	O	A deck RMS monitor signal output pin. "L" during RMS operation to inform RMS controller of RMS operation. See Figure 2 for RMS timing chart.

50	$\overline{\text{BIAS}}$	0	Recording bias oscillation control signal output pin. "L" during B deck recording and dubbing, otherwise "H".
51	$\overline{\text{REC RELAY}}$	0	Relay control signal output pin. "L" when B deck ● (REC) key, HIGH SPEED DUBBING key or NORMAL SPEED DUBBING key is ON, otherwise "H".
52	$\text{PB}/\overline{\text{REC}}$	0	Playback/recording switching signal output pin. "L" when B deck ● (REC) key is ON, otherwise "H".
53	$\overline{\text{B-PLAY}}$	0	A deck/B deck switching signal output pin. "L" during B deck playback and AMS, otherwise "H".
54	$\overline{\text{A-PLAY}}$	0	A deck/B deck switching signal output pin. "L" during A deck playback; otherwise "H". Not used on this model.
55	$\overline{\text{HIGH SPEED}}$	0	Normal speed dubbing/high speed dubbing switching signal output pin. "L" for high speed dubbing, otherwise "H".
56	$\overline{\text{PM-KICK}}$	0	Plunger solenoid kick signal output pin. "  " during plunger solenoid (PM501,502) kick, otherwise "H".
57	A-PM	0	A deck plunger solenoid control signal output pin. "H" when A deck plunger solenoid is ON, otherwise "L".
58	$\overline{\text{A-CPM}}$	0	A deck capstan motor control signal output pin. "L" when A deck capstan motor is ON, otherwise "H". This output is used to lower reel motor torque.
59	B-PM	0	B deck plunger solenoid control signal output pin. "H" when B deck plunger solenoid is ON, otherwise "L".
60	$\overline{\text{B-CPM}}$	0	B deck capstan motor control signal output pin. "L" when B deck capstan motor is ON, otherwise "H". This output is used to lower reel motor torque.
61 62 63 64	D C B A	0	Key matrix signal source output and cathode side digit output for dynamic lighting of LED. Refer to Figure 1 and Tables 2,3 for LED and switch functions.



Figuer. 1 LED Matrix, Switch Matrix

Table 2. LED Functions

Ref.No.	LED Name	Color	Function
D805	NORMAL SPEED DUBBING	red	Indicates normal speed dubbing mode. Blinks if B deck erase prevention switches (S505,507) are OFF during dubbing.
D806	HIGH SPEED DUBBING	red	Indicates high speed dubbing mode. Blinks if B deck erase prevention switches (S505,507) are OFF during dubbing.
D814	▶ (A deck)	green	A deck playback direction display (FWD direction).
D815	PLAY(A deck)	green	A deck playback operation display.
D816	◀ (A deck)	green	A deck playback direction display (REV direction).
D817-1	◀ (B deck)	red	B deck recoridng direction display (REV direction). Blinks of only ● switch (S815) is ON.
D817-2	◀ (B deck)	green	B deck playback direction display (REV direction).

D818-1	▶ (B deck)	red	B deck recording direction display (FWD direction). Blinks if only ● switch (S815) is ON.
D818-2	▶ (B deck)	green	B deck playback direction display (FWD direction).
D819	PLAY(B deck)	green	B deck playback, recording operation display.
D820	■ (B deck)	orange	B deck pause display. Blinks during power ON and recording mute operation.
D821	AUTO PAUSE	orange	Auto pause display for normal speed dubbing.

Table 3. Switch Functions

Ref.No.	Name	Type	Function
S503	Direction (A deck)	leaf	Switch for memorizing A deck head direction. With the head block up, during FWD: OFF, during REV:ON. With head block down, the head is always in FWD direction.
S504	Head UP/DOWN (A deck)	leaf	A deck head block up/down detection switch. With head block up:ON, head block down: OFF. If this switch is ON (head block is not all the way down) when going from play to stop, for example, when the head block starts to go down, and during power ON, the system controller will again lower the head block.
S505	Erase prevention (◀) (B deck)	slide	B deck REV side erase prevention tab detection switch. ON when there is a tab.
S507	Erase prevention (▶) (B deck)	slide	B deck RWD side erase prevention tab detection switch. ON when there is a tab.
S508	Direction (B deck)	leaf	Switch for memorizing B deck head direction. With the head block up, during FWD: OFF, during REV:ON. With head block down, the head is always in FWD direction.

S509	Head UP/DOWN (B deck)	leaf	B deck head block up/down detection switch. With head block up:ON, head block down: OFF. If this switch is ON (head block is not all the way down) when going from play to stop, for example, when the head block starts to go down, and during power ON, the system controller will again lower the head block.
S801	NORMAL SPEED DUBBING	contact	Normal speed dubbing switch.
S802	HIGH SPEED DUBBING	contact	High speed dubbing switch.
S804	AUTO PAUSE	contact	Auto pause switch during dubbing.
S805	◀◀ (A deck)	contact	A deck FR key switch.
S806	◀ (A deck)	contact	A deck REV key switch.
S807	■ (A deck)	contact	A deck stop key switch.
S808	▶ (A deck)	contact	A deck FWD key switch.
S809	▶▶ (A deck)	contact	A deck FF key switch.

IC701 (for TC-V710WR only)

IC701 (LM6416E-1976) is a 4 bit microcomputer which performs communication with the system control IC (IC501) to control RMS, RMS key input and RMS LED display. The operation for RMS is explained below.

As shown in Figure 2, when RMS is set by the RMS keys 1 - 10, the RMS control IC (IC701) pins 9  $\overline{GO}$  and 10  $\overline{BACK}$  go low.

When PLAY key (either ▶ or ◀) is input to system control IC (IC501), rewinds the tape completely and output 41  $\overline{REQ}$ .

When  $\overline{REQ}$  is input to IC701, it outputs "GO" or "BACK" command.

"GO" command: 9  $\overline{GO}$  : stays "L"; 10  $\overline{BACK}$  : "H" pulse  
 "BACK" command: 9  $\overline{GO}$  : "H" pulse; 10  $\overline{BACK}$  : stays "L"

IC501 places the mechanism in AMS state when there is a "BACK" or "GO" command.

IC701 inputs the AMS signal at 1  $\overline{AMS IN}$ , counting is done inside the IC, and when the AMS signal for the start of the specified selection is input, 11  $\overline{AMS OUT}$  is output.

IC501 places the mechanism in playback state when 38  $\overline{AMS SIG}$  is input.

When the selection ends, if the next one is not set, IC701 makes 9  $\overline{GO}$  and 10  $\overline{BACK}$  high, and IC501 stops the mechanism.

If the next selection is set, IC501 again outputs 41  $\overline{REQ}$  and continues RMS operation according to commands from IC701.

S509	Head UP/DOWN (B deck)	leaf	B deck head block up/down detection switch. With head block up:ON, head block down: OFF. If this switch is ON (head block is not all the way down) when going from play to stop, for example, when the head block starts to go down, and during power ON, the system controller will again lower the head block.
S801	NORMAL SPEED DUBBING	contact	Normal speed dubbing switch.
S802	HIGH SPEED DUBBING	contact	High speed dubbing switch.
S804	AUTO PAUSE	contact	Auto pause switch during dubbing.
S805	◀ (A deck)	contact	A deck FR key switch.
S806	◀ (A deck)	contact	A deck REV key switch.
S807	■ (A deck)	contact	A deck stop key switch.
S808	▶ (A deck)	contact	A deck FWD key switch.
S809	▶▶ (A deck)	contact	A deck FF key switch.

#### IC701 (for TC-V710WR only)

IC701 (LM6416E-1976) is a 4 bit microcomputer which performs communication with the system control IC (IC501) to control RMS, RMS key input and RMS LED display. The operation for RMS is explained below.

As shown in Figure 2, when RMS is set by the RMS keys 1 - 10, the RMS control IC (IC701) pins 9 GO and 10 BACK go low.

When PLAY key (either ▶ or ◀) is input to system control IC (IC501), rewinds the tape completely and output 41 REQ.

When REQ is input to IC701, it outputs "GO" or "BACK" command.

"GO" command: 9 GO : stays "L"; 10 BACK : "H" pulse  
 "BACK" command: 9 GO : "H" pulse; 10 BACK : stays "L"

IC501 places the mechanism in AMS state when there is a "BACK" or "GO" command.

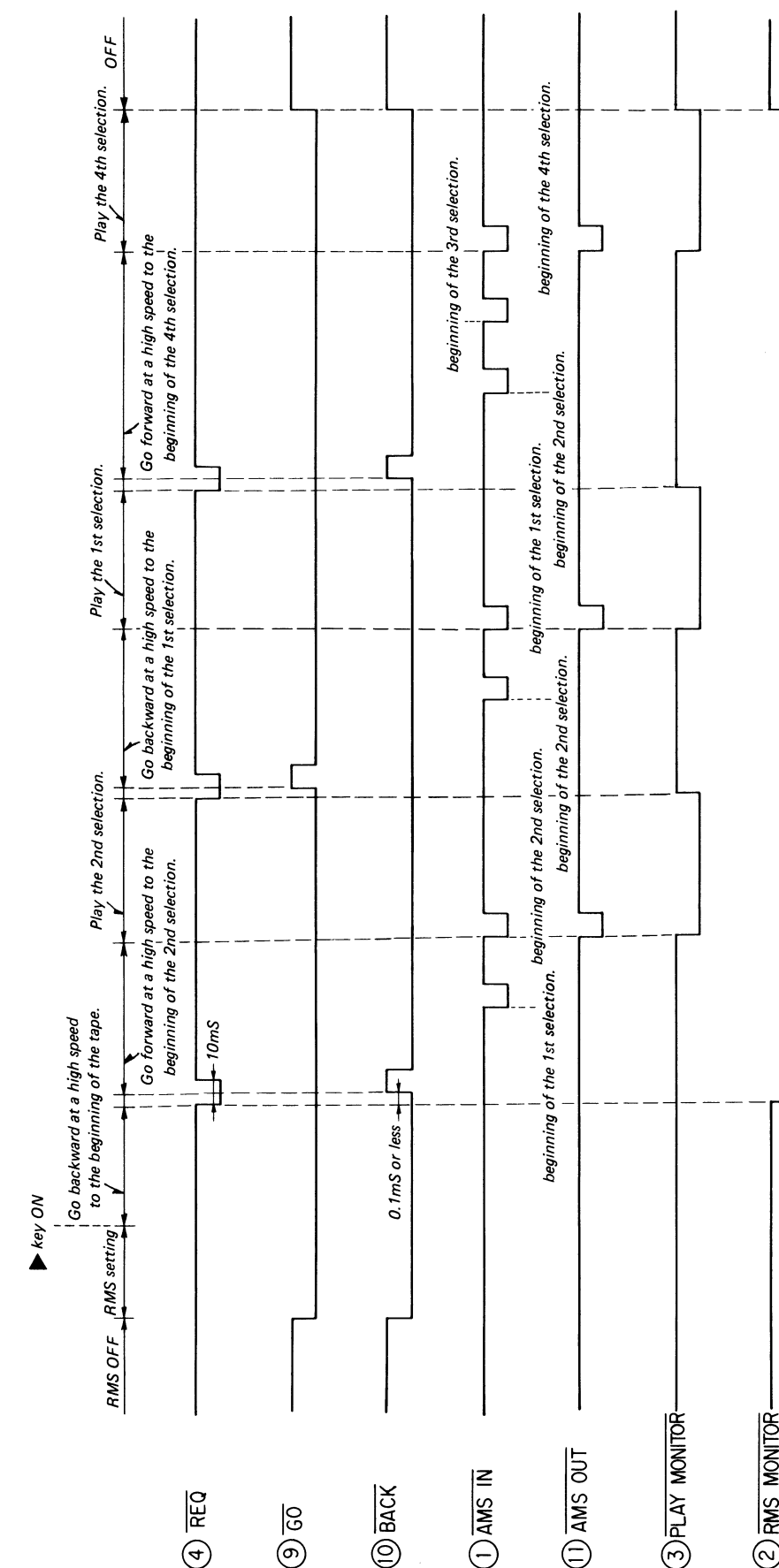
IC701 inputs the AMS signal at 1 AMS IN, counting is done inside the IC, and when the AMS signal for the start of the specified selection is input, 11 AMS OUT is output.

IC501 places the mechanism in playback state when 38 AMS SIG is input.

When the selection ends, if the next one is not set, IC701 makes 9 GO and 10 BACK high, and IC501 stops the mechanism.

If the next selection is set, IC501 again outputs 41 REQ and continues RMS operation according to commands from IC701.

The case of RMS setting in order of 2nd → 1st → 4th selections on the FWD side.

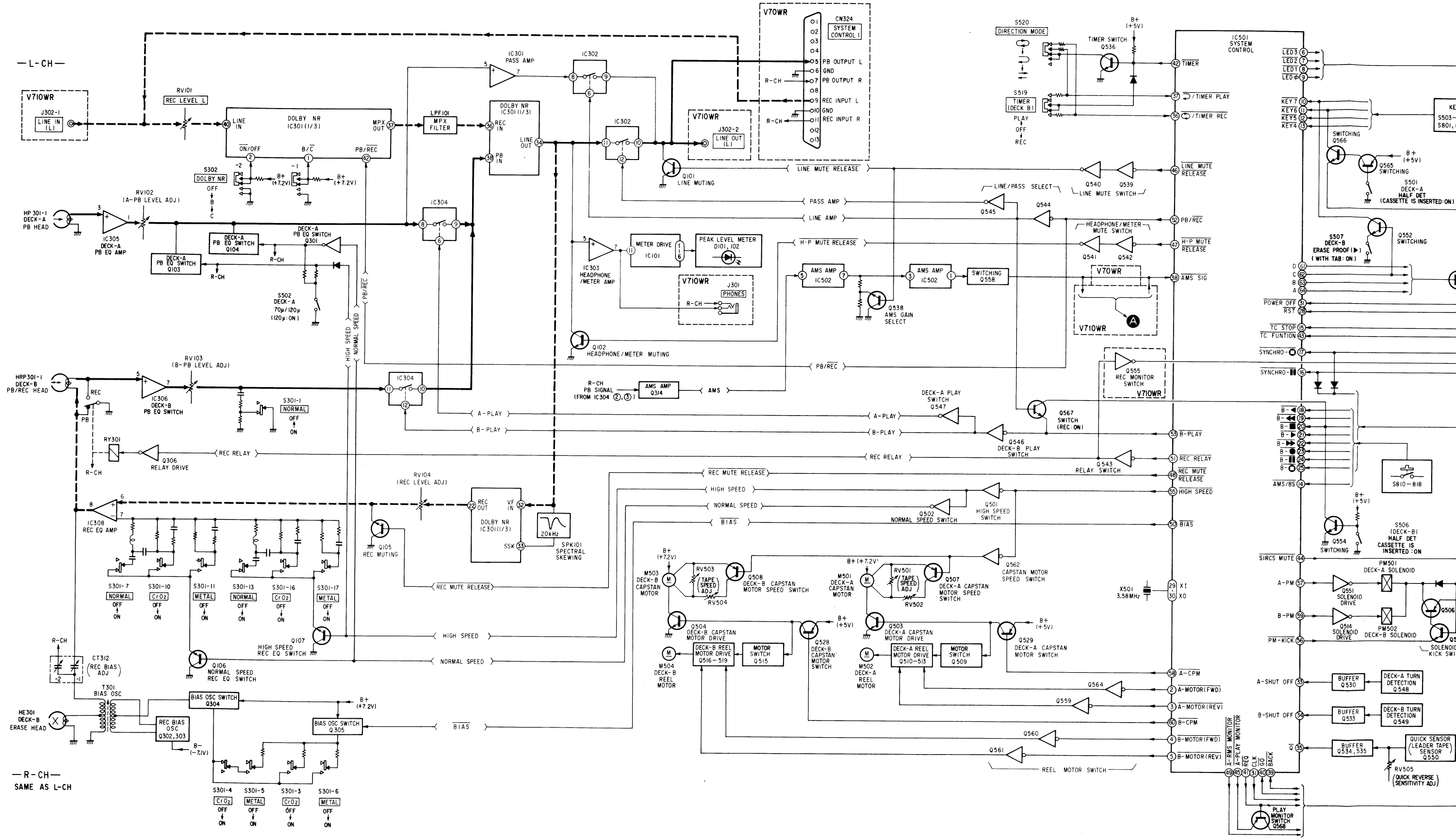


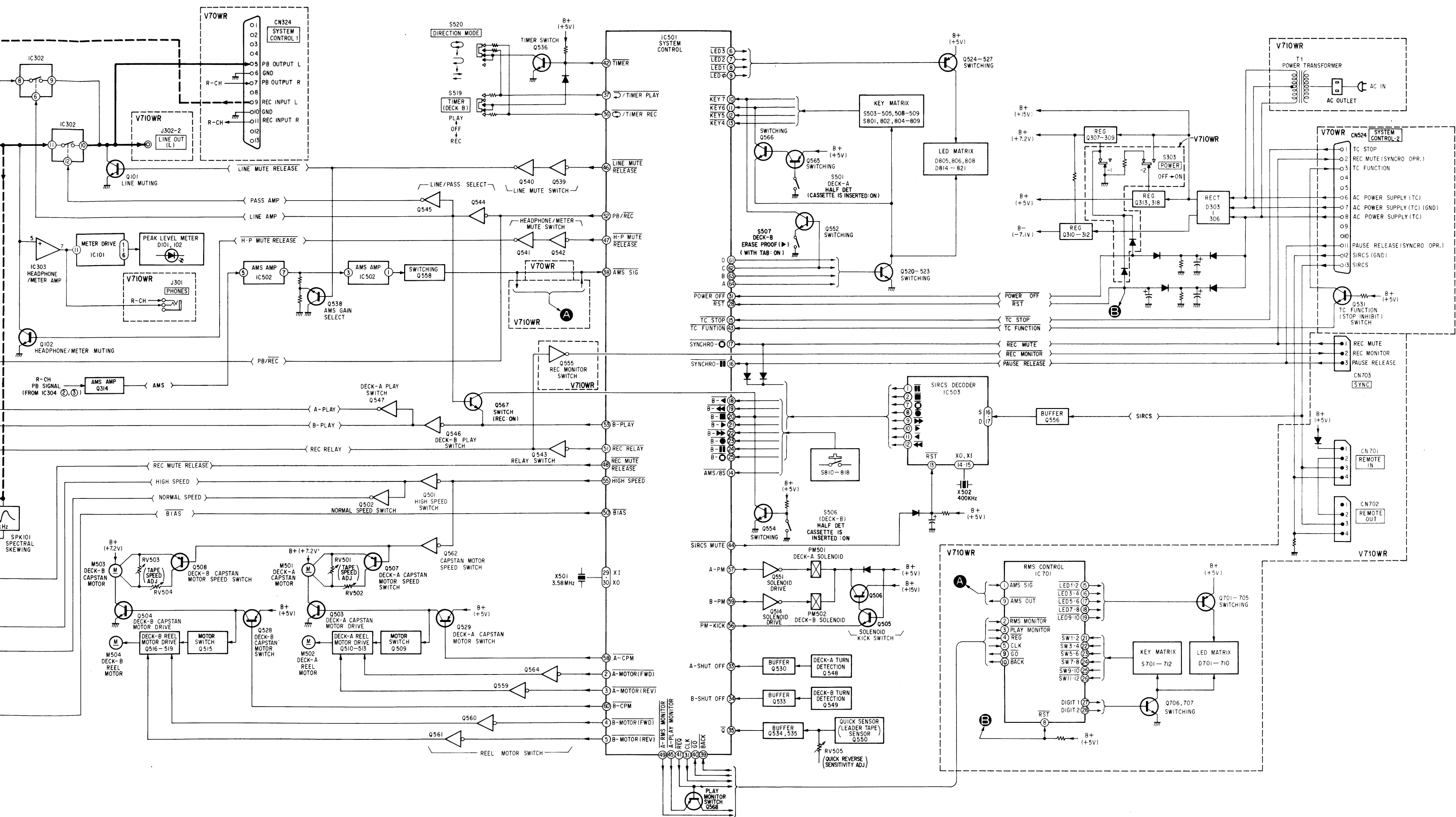
Note : The circled number indicates IC 701's terminal.

Figure 2 RMS Timing Chart



1-2. BLOCK DIAGRAM

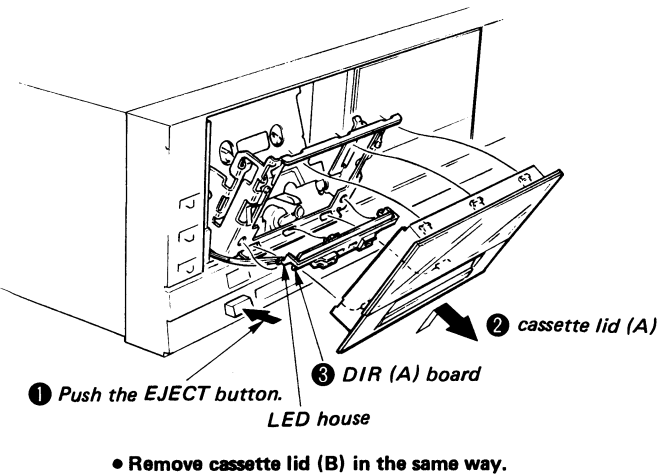




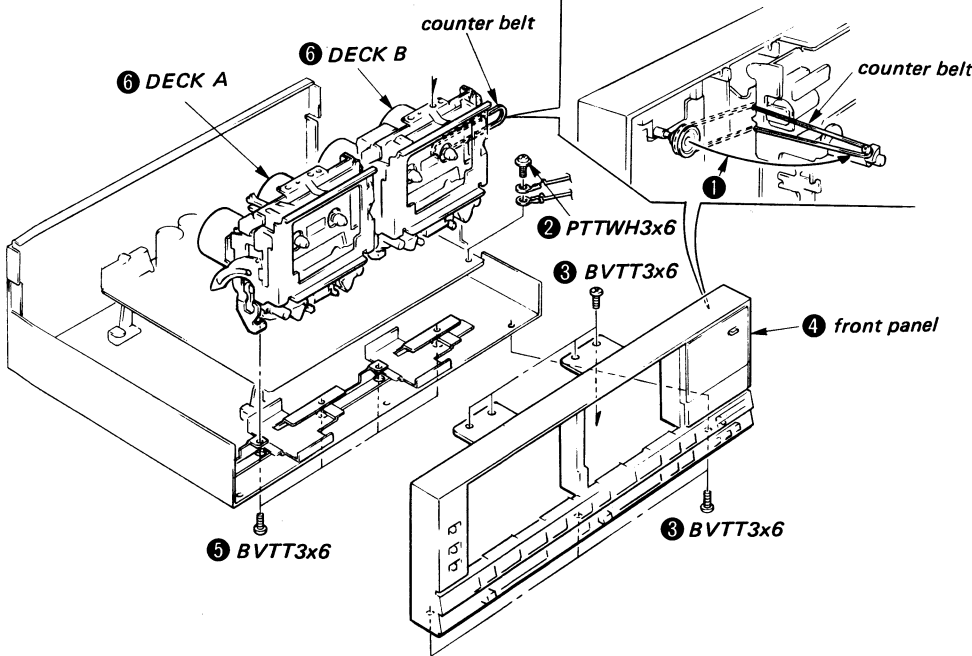
SECTION 2  
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

CASSETTE LID

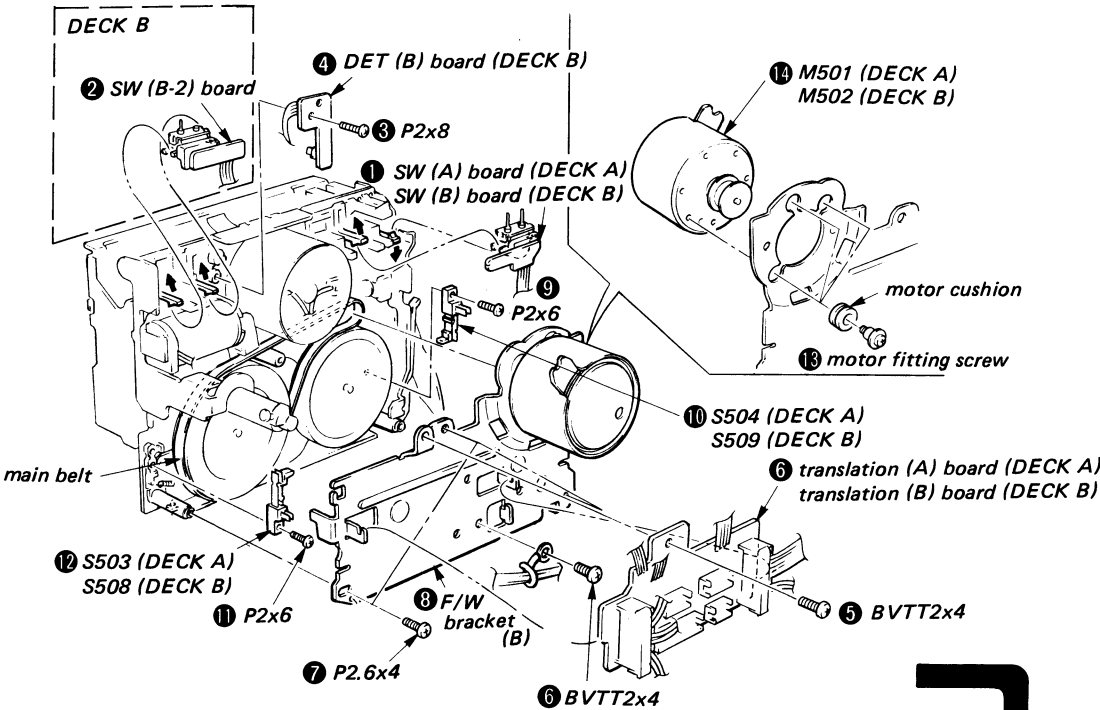


FRONT PANEL, MECHANISM SECTION

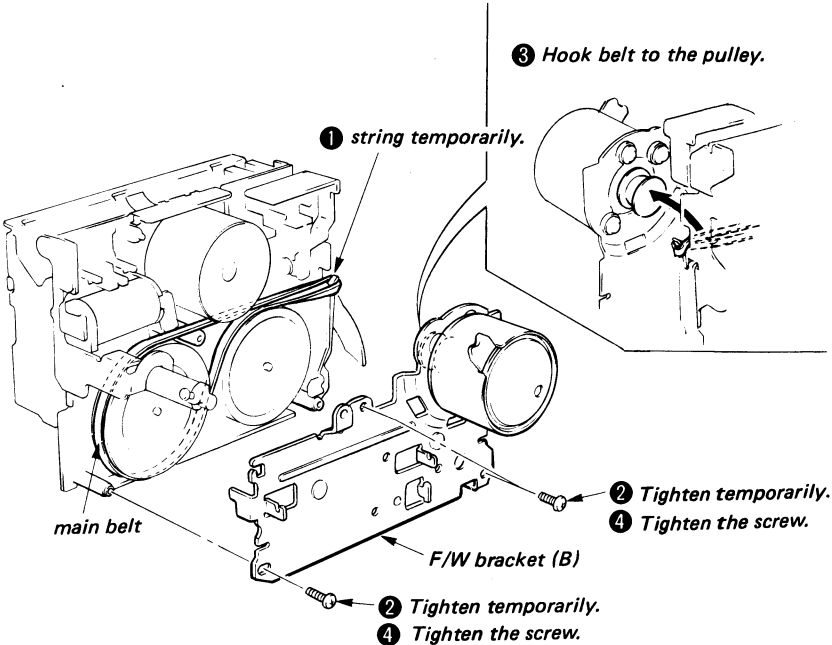


CASE  
Take out four screws securing case.

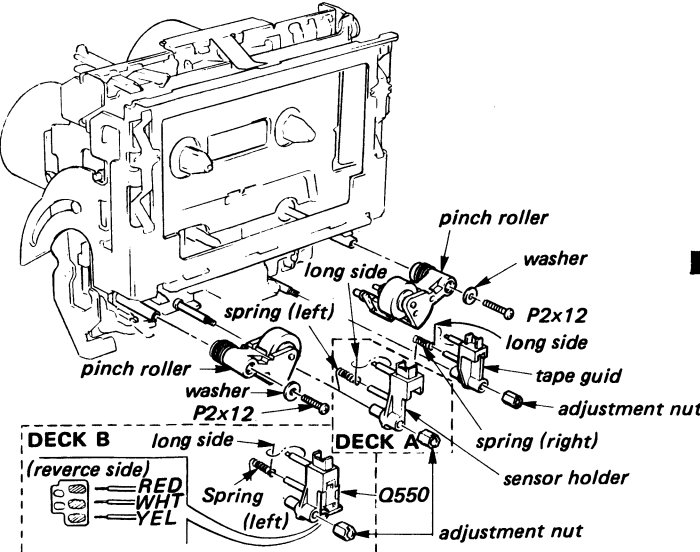
CAPSTAN MOTOR M501 (DECK A), M502 (DECK B), PC BOARDS



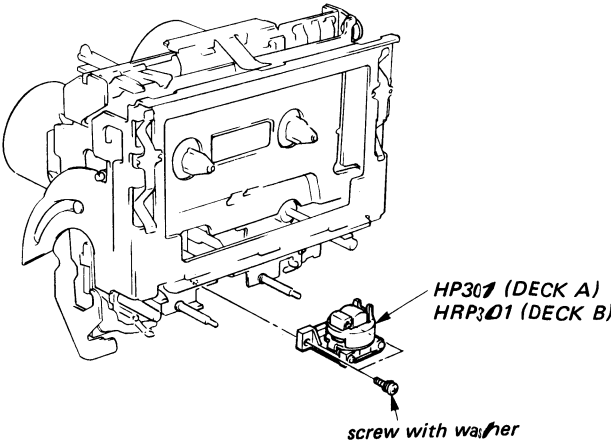
MAIN BELT INSTALLATION



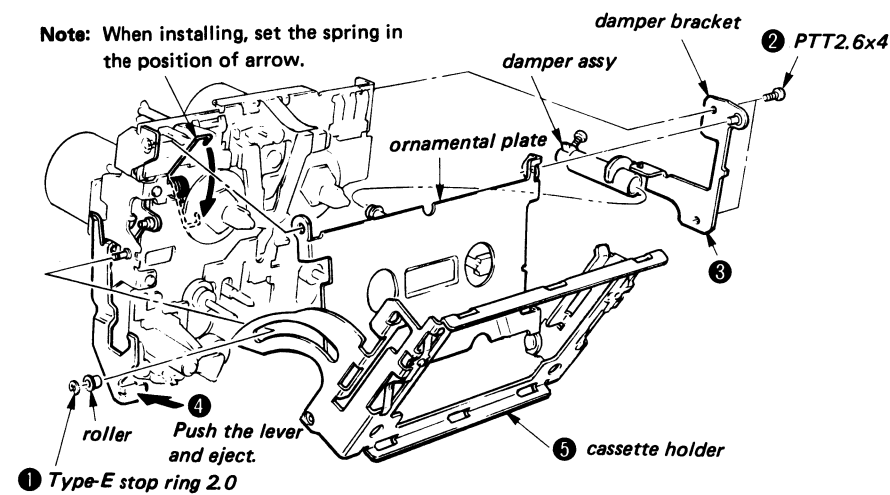
PINCH ROLLER, TAPE GUIDE, SENSOR HOLDER, Q550



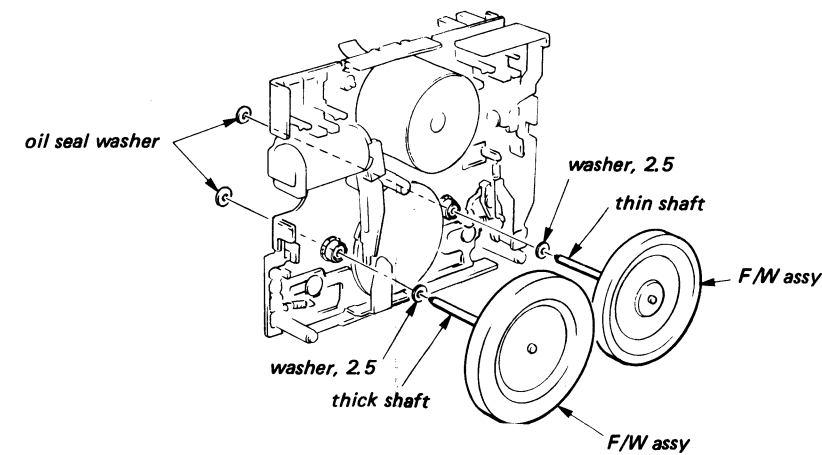
HP301 (DECK A), HRP301 (DECK B)



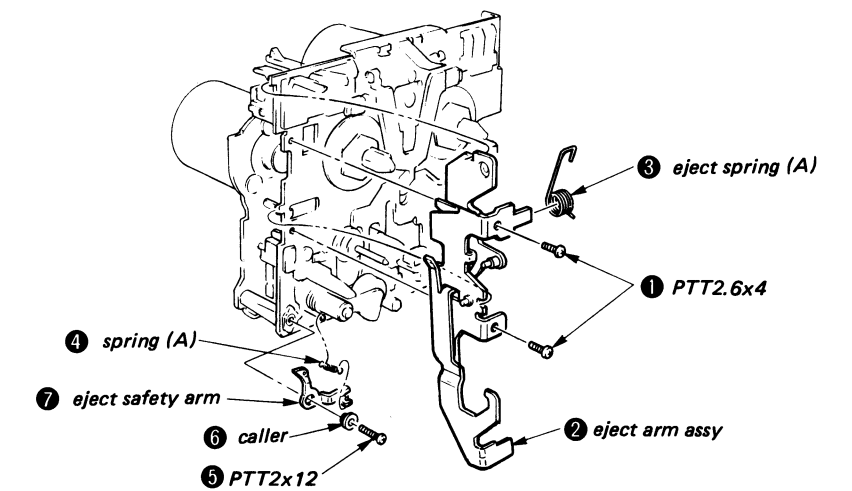
# CASSETTE HOLDER, ORNAMENTAL PLATE



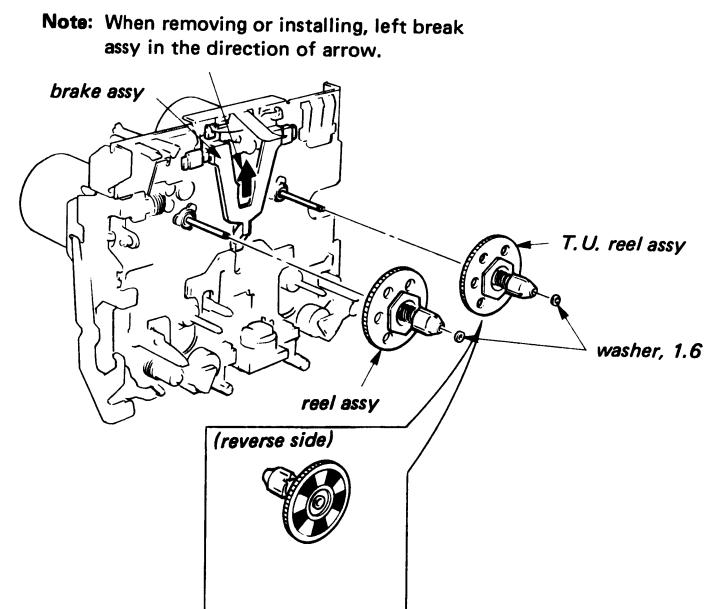
# FLYWHEEL



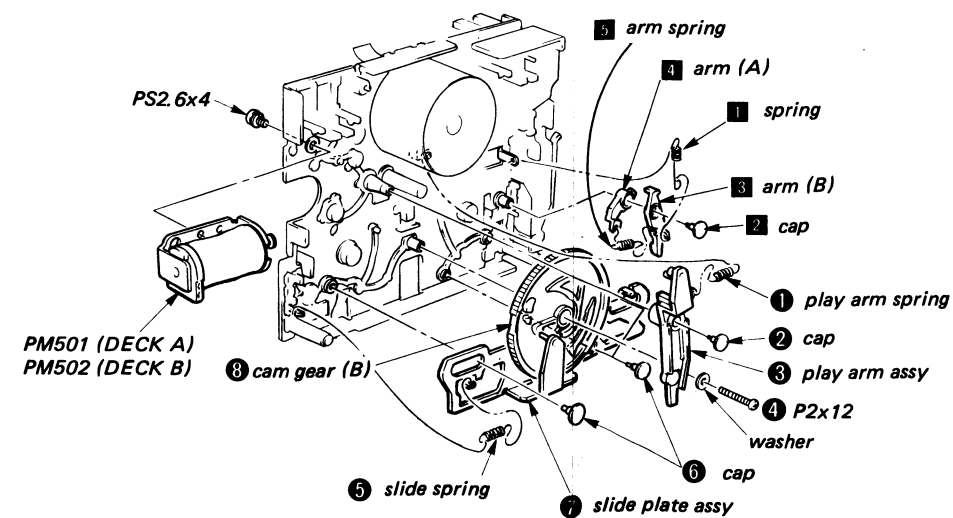
# EJECT ARM, EJECT SAFETY ARM



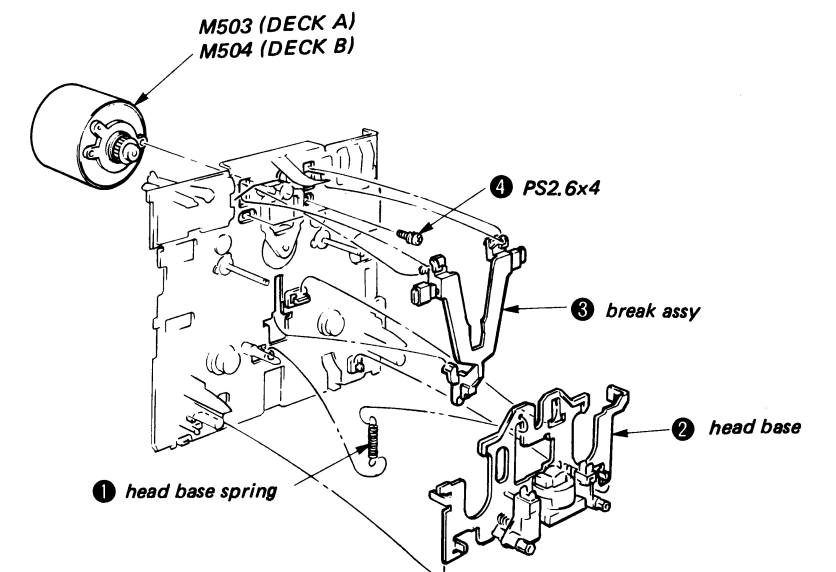
# REEL TABLE



# PLUNGER SOLENOID PM501 (DECK A), PM502 (DECK B) SLIDE PLATE, CAM GEAR (B), PLAY ARM, ARM (A)/(B)



# HEAD BASE, BREAK, REEL MOTOR M503 (DECK A), M504 (DECK B)



## SECTION 3 ADJUSTMENTS

### 3-1. MECHANICAL ADJUSTMENTS

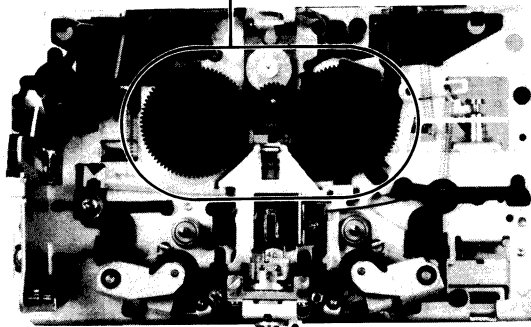
#### PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:
 

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

#### Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	30 to 70 g-cm (0.42 to 0.97 oz-inch)
REV	CQ-102RC	30 to 70 g-cm (0.42 to 0.97 oz-inch)
FF, REW	CQ-201B	90 to 160 g-cm (1.26 to 2.22 oz-inch)



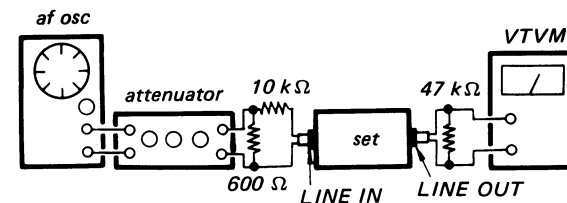
### 3-2. ELECTRICAL ADJUSTMENTS

**Note:** The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
 

DOLBY NR switch:	OFF
TIMER switch:	OFF
- Standard Record:
  - Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

#### — Record Mode —



#### Standard Input Level

	LINE IN
source impedance	10 kΩ
input level	0.2 V (-10 dB)

#### Standard Output Level

	LINE OUT
load impedance	47 kΩ
output level	0.44 V (-5 dB)

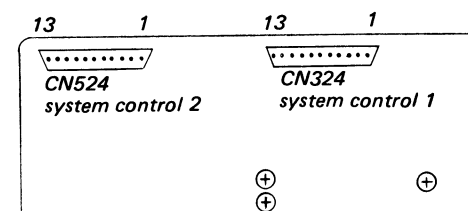
#### Test Tape:

Type	Signal	Used for
P-4-A100	10kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz 0dB	Level Adjustment
WS-48B	3kHz 0dB	Tape Speed Adjustment

CN324: System Control 1 (TC-V70WR only)

	L-CH	R-CH	GND
LINE IN	9	11	10
LINE OUT	5	7	6

— audio board (component side) —

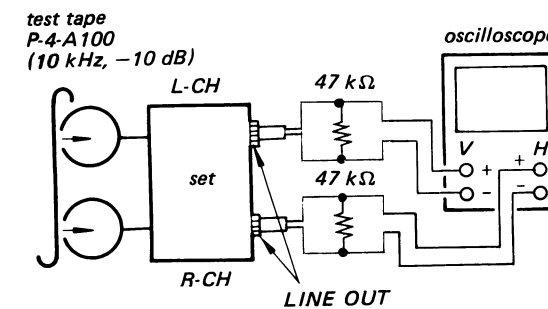


### Record/playback Head Azimuth Adjustment

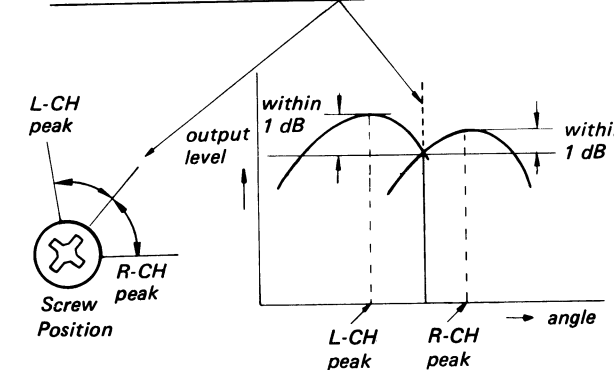
Deck-A Deck-B

#### Procedure:

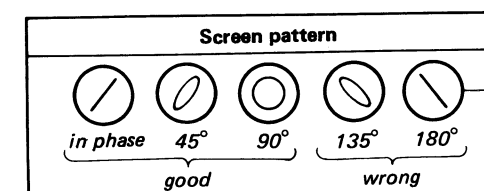
- Mode: forward playback



- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screws until both of output levels match together within 1 dB.



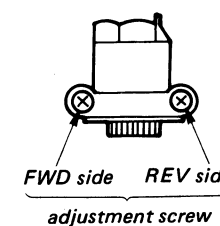
#### • Phase Check



- Set in the reverse mode and repeat the steps 1-2.
- After the adjustment, lock the screws with locking compound.

— record/playback head —

#### Adjustment Location:

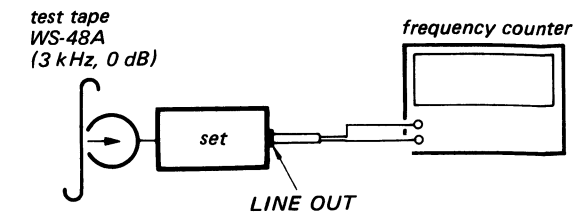


### Tape Speed Adjustment

Deck-A Deck-B

#### Procedure:

Mode: forward playback

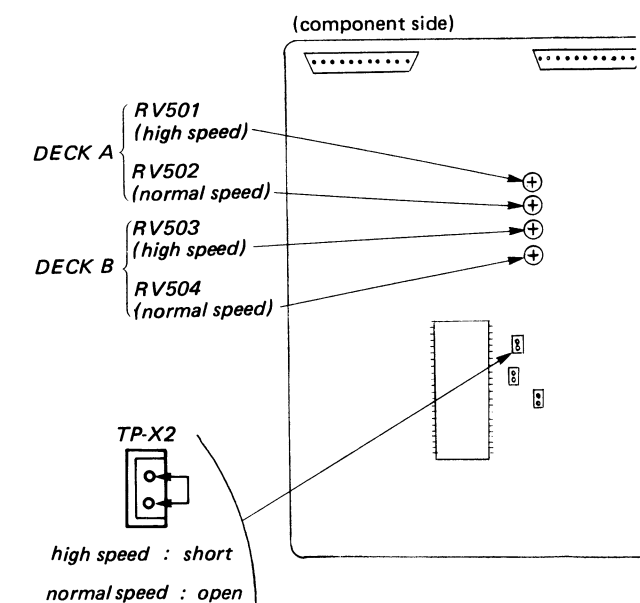


Play back the beginning of test tape WA-48B, and adjust { deck-A: RV501 (high speed), RV502 (normal speed), deck-B: RV503 (high speed), RV504 (normal speed) }, so that the reading on frequency counter meets the specification below. Frequency difference between deck-A and deck-B should be within 1.5% (high speed: 90 Hz, normal speed: 45Hz).

#### Specifications:

	Deck	Adjustment part	Test pin (TP-X2)	Frequency counter
High speed	A	RV501	SHORT	5,960 — 6,040 Hz
	B	RV503		
Normal speed	A	RV502	OPEN	2,980 — 3,020 Hz
	B	RV504		

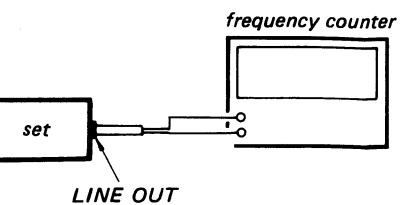
Adjustment location: audio board



stment

3

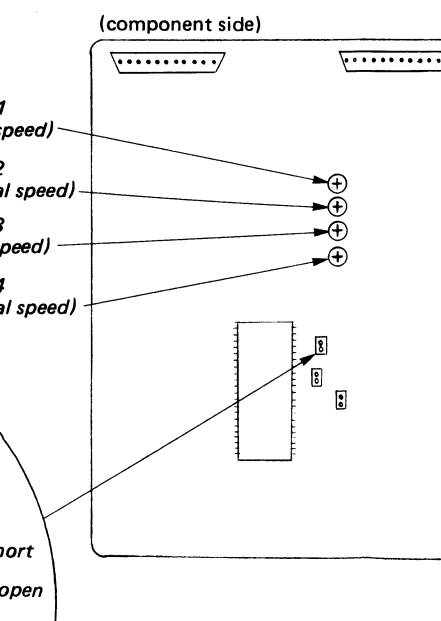
ard playback



beginning of test tape WA-48B, and RV501 (high speed), RV502 (normal speed), RV503 (high speed), RV504 (normal speed), so that the frequency counter meets the specification by difference between deck-A and be within 1.5% (high speed: 90 Hz, 315 Hz).

adjustment part	Test pin (TP-X2)	Frequency counter
RV501	SHORT	5,960 – 6,040 Hz
RV503	SHORT	5,960 – 6,040 Hz
RV502	OPEN	2,980 – 3,020 Hz
RV504	OPEN	2,980 – 3,020 Hz

tion: audio board

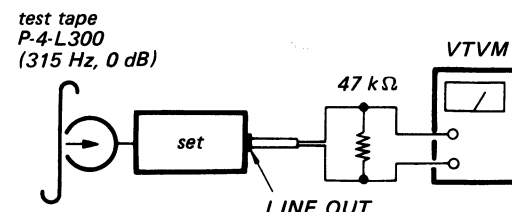


### Playback Level Adjustment

Deck-A Deck-B

#### Procedure:

Mode: forward playback



Adjust {deck A: RV102 (L-CH), 202 (R-CH)} so that the reading on VTVM meets the specification below.

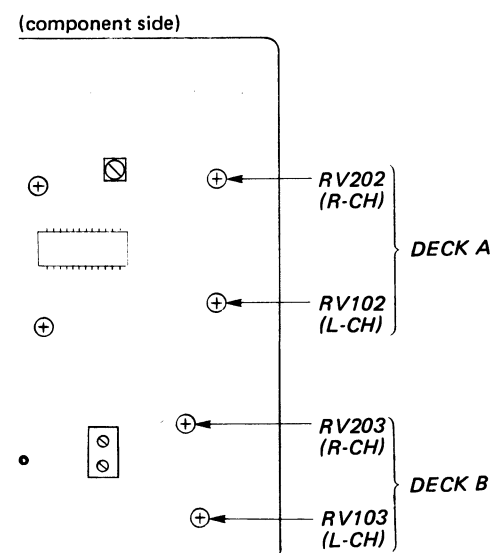
#### Specification:

LINE OUT level: 0.41 to 0.46 V  
(-5.5 to -4.5 dB)

Level difference between channels:  
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



### Record Bias Adjustment

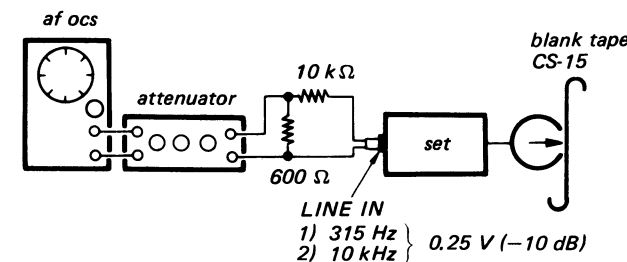
Deck-B

#### Setting:

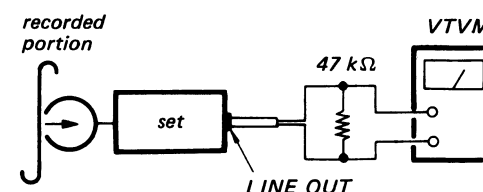
REC LEVEL control: standard record  
(See page 29.)

#### Procedure:

1. Mode: record

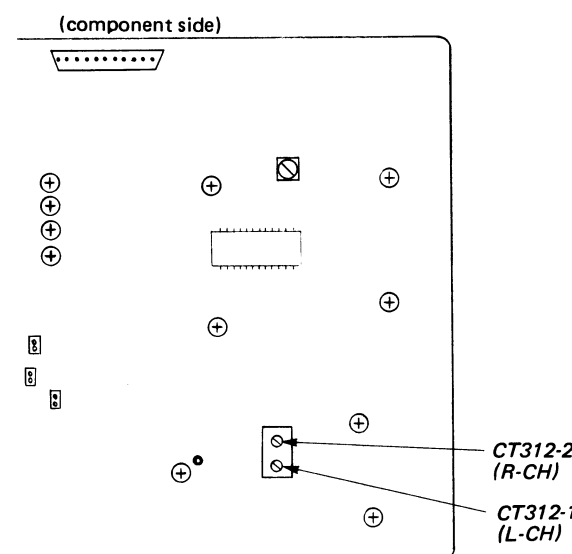


2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT312-1 (L-CH), CT312-2 (R-CH) and repeat the steps given above.

Adjustment Location: audio board



### Record Level Adjustment

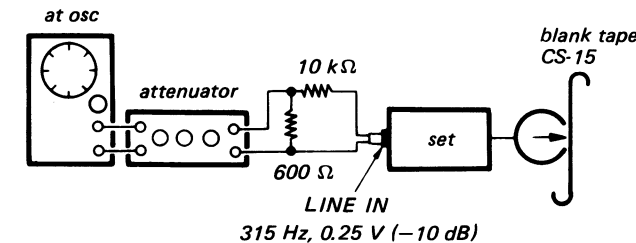
Deck-B

#### Setting:

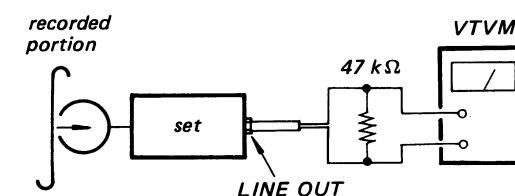
REC LEVEL control: standard record  
(See page 29.)

#### Procedure:

1. Mode: record



2. Mode: playback

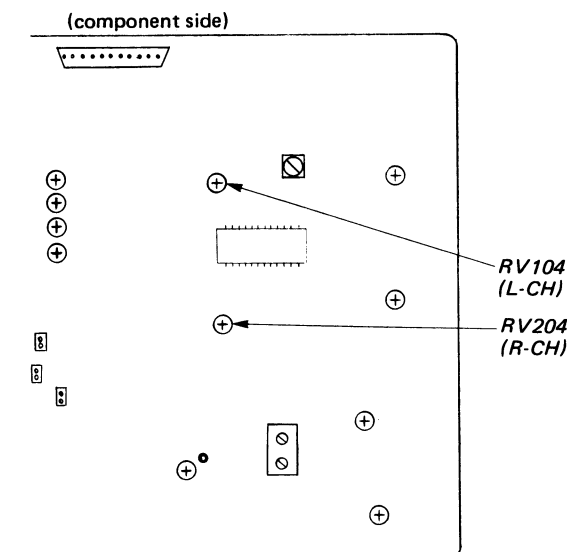


3. Play back the signal recorded in step 1. Confirm that the signal level is within the specification below. If necessary, adjust RV104 (L-CH), RV204 (R-CH) and repeat the step 1-3.

#### Specification:

LINE OUT level: 0.41–0.46 V  
(-5.5 to -4.5 dB)

Adjustment Location: audio board



### Quick Reverse Sensitivity Adjustment

Deck-B

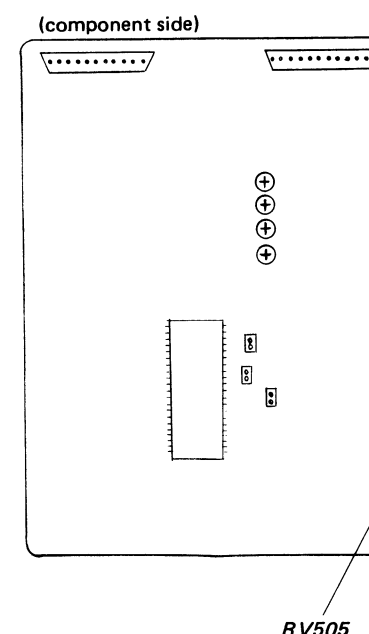
#### Conditions:

Direction mode switch: →

#### Procedure:

1. Connect oscilloscope to TP1.
2. Load an empty cassette with inside and put into FWD mode.
3. Turn RV505 fully clockwise. (Reading on the oscilloscope is "L".)
4. Gradually turn RV505 counter-clockwise until the reading on the oscilloscope changes from "L" level to "H" level.
5. Load C-120 tape cassette and put into FWD mode.
6. Confirm that the reading on the oscilloscope is "H" level at the magnetic portion of the leading portion and the trailing portion of the tape.
7. Confirm that the tape cassette is in FWD mode.

Adjustment Location: audio board



## Record Bias Adjustment

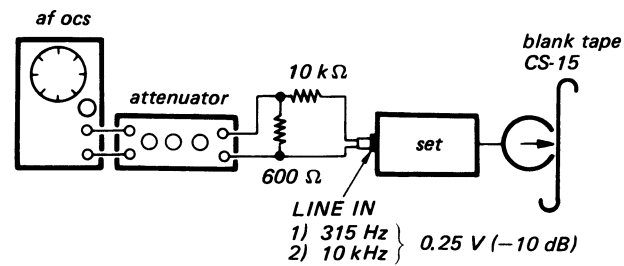
## Deck-B

## Setting:

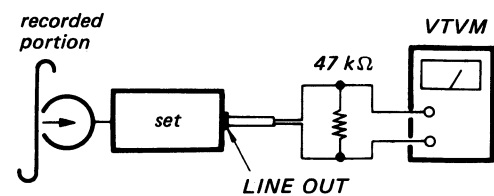
REC LEVEL control: standard record  
(See page 29.)

## Procedure:

1. Mode: record

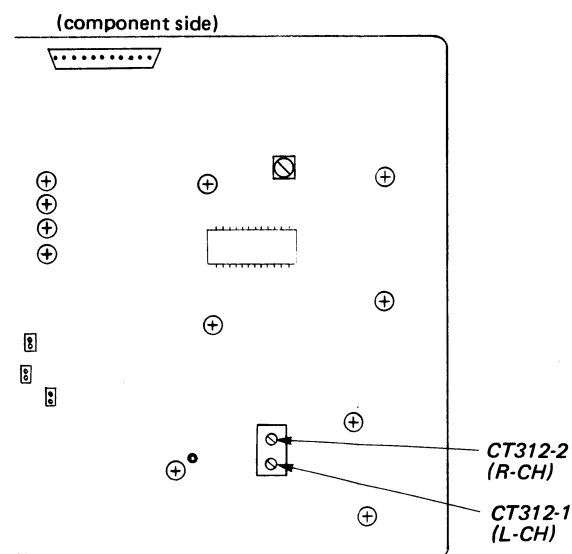


2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT312-1 (L-CH), CT312-2 (R-CH) and repeat the steps given above.

Adjustment Location: audio board



## Record Level Adjustment

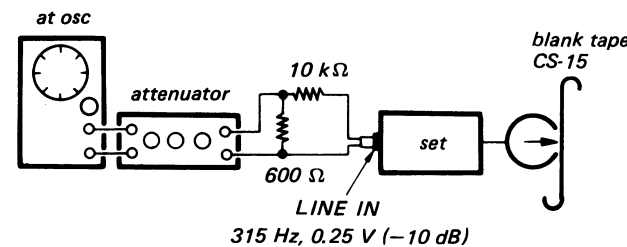
## Deck-B

## Setting:

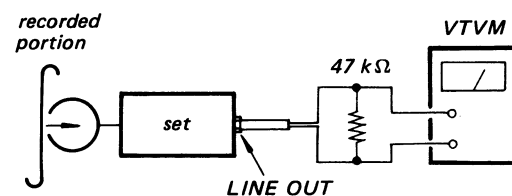
REC LEVEL control: standard record  
(See page 29.)

## Procedure:

1. Mode: record



2. Mode: playback

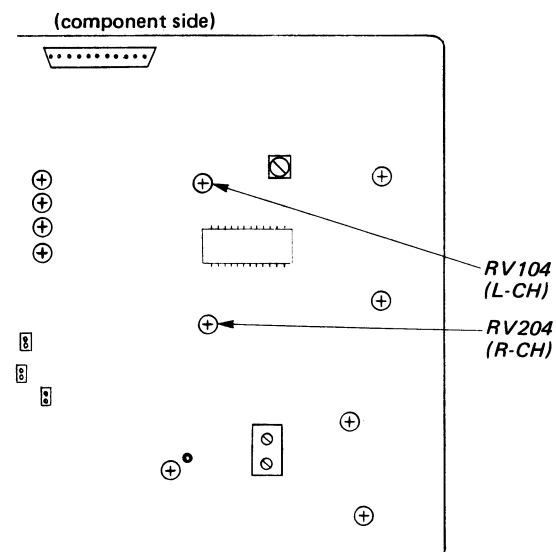


3. Play back the signal recorded in step 1.  
Confirm that the signal level is within the specification below. If necessary, adjust RV104 (L-CH), RV204 (R-CH) and repeat the step 1-3.

## Specification:

LINE OUT level: 0.41–0.46 V  
(–5.5 to –4.5 dB)

Adjustment Location: audio board



## Quick Reverse Sensitivity Adjustment

## Deck-B

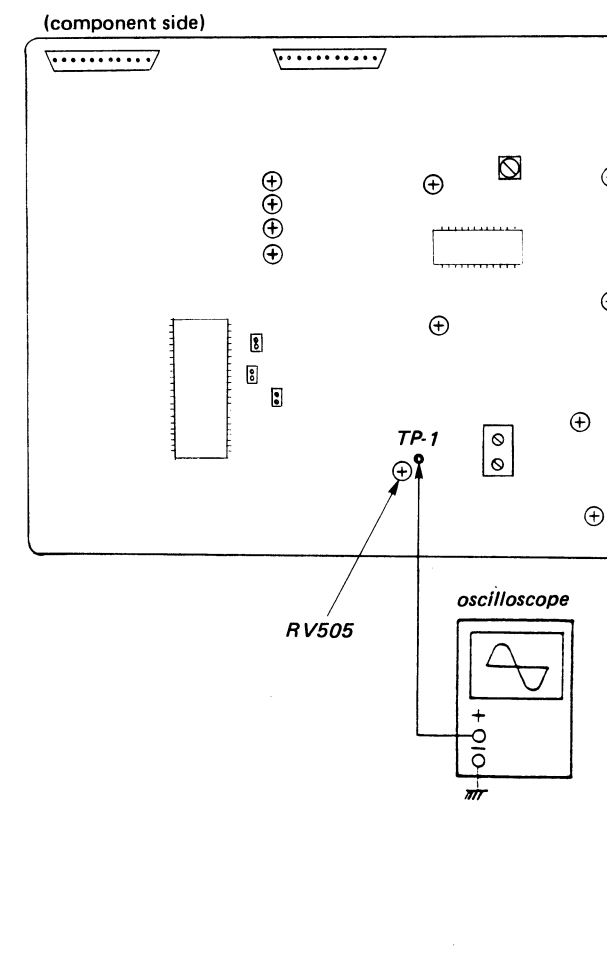
## Conditions:

Direction mode switch:  $\leftrightarrow$

## Procedure:

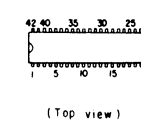
1. Connect oscilloscope to TP1 on audio board.
2. Load an empty cassette with no tape wound inside and put into FWD mode.
3. Turn RV505 fully clockwise.  
(Reading on the oscilloscope is "L" level.)
4. Gradually turn RV505 counterclockwise to the position where the reading on the oscilloscope changes from "L" level to "H" level.
5. Load C-120 tape cassette and put into FWD mode.
6. Confirm that the reading on the oscilloscope is "H" level at the magnetic portion on tape.
7. Confirm that the tape cassette stops at the joint of the leading portion and the magnetic portion on tape.

Adjustment Location: audio board

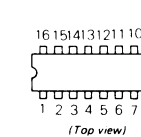


## Semiconductor Lead Layouts

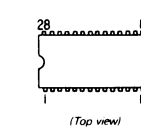
## CX20187



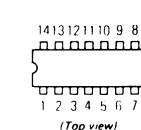
## IR2E02



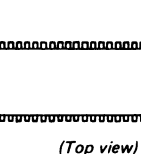
## LM6416E-1979



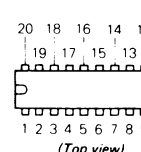
## M4066BP



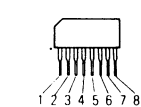
## M50742-404SP



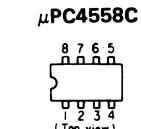
## M50761-417P



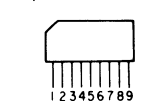
## M5218L



## M5220P



## μPC4570HA



2SA1048-GR  
DTA114ES  
DTA144ES  
DTC114ES  
DTC143TS  
DTC144ES



2SA1150  
2SA1175  
2SC2785



2SB1094-L  
2SD1406



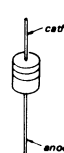
2SB734



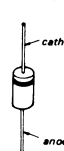
2SC2120-Y  
2SC945-P



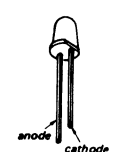
1SS202-1



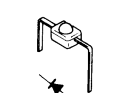
10EZ  
HZ6A1L  
HZ6C2L



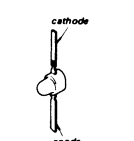
AA3422S  
BG3422S  
BR3422S



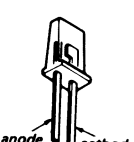
GL-1EG102



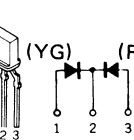
GL-1HY102



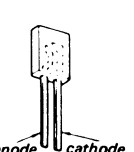
GL-9HY23



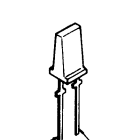
GL-9ND002



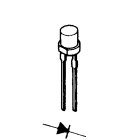
GL-9NG260



GL-9PR23



SEL2813A-C

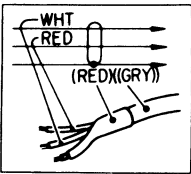




• Refer to page 33 for Semiconductor Lead Layouts.

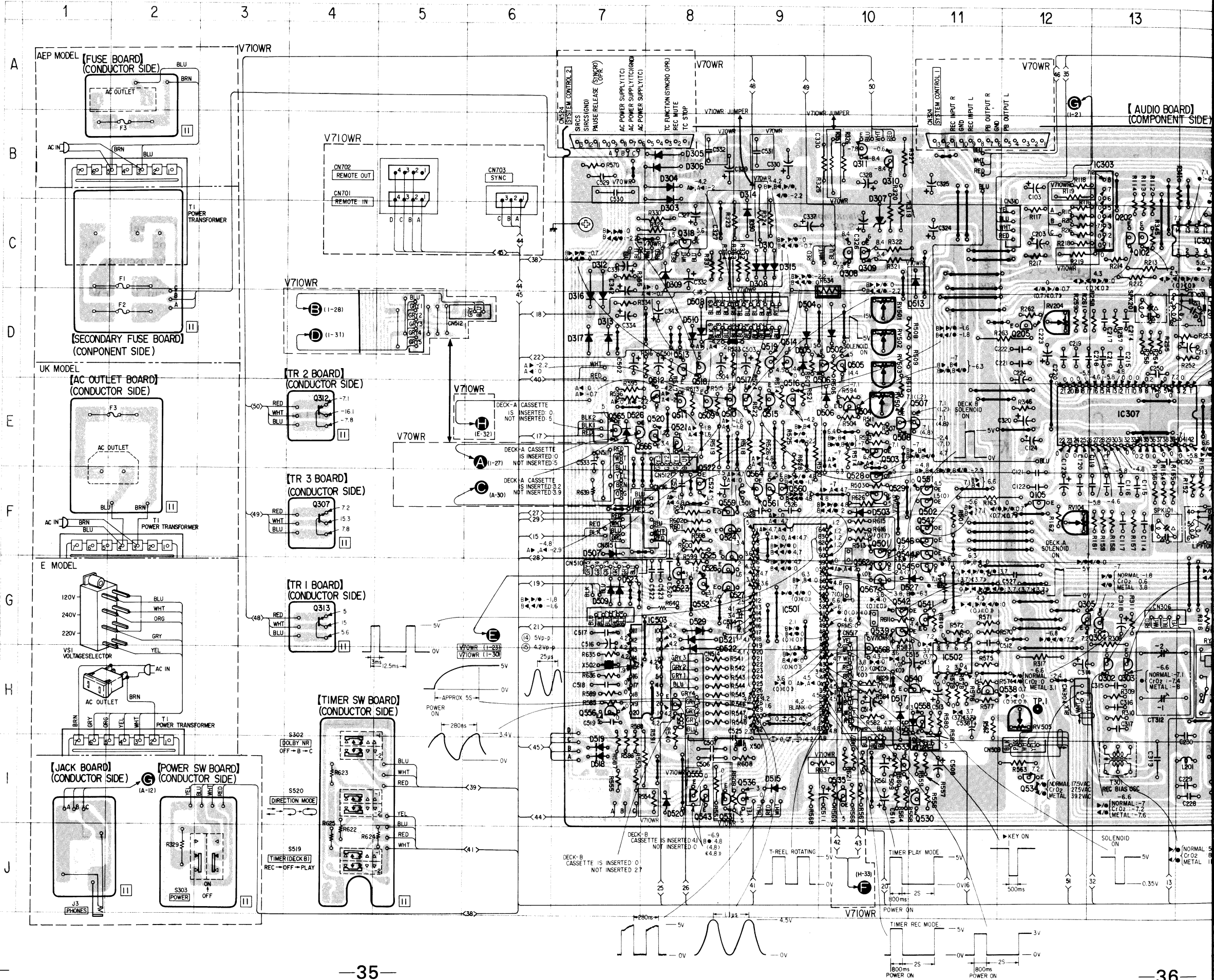
4-1. MOUNTING DIAGRAM

Note:  
• Color code of sleeving over the end of the jacket.

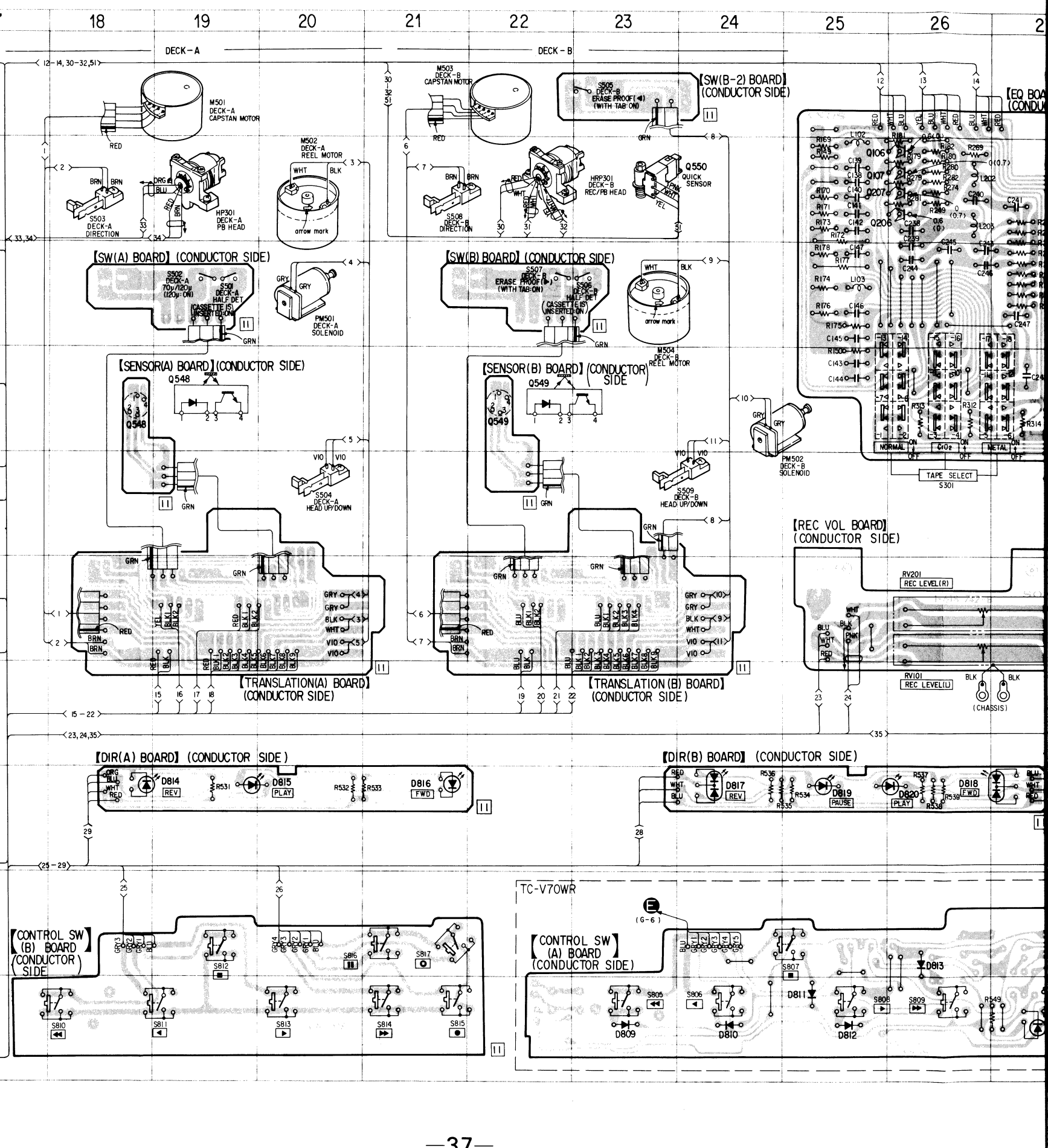


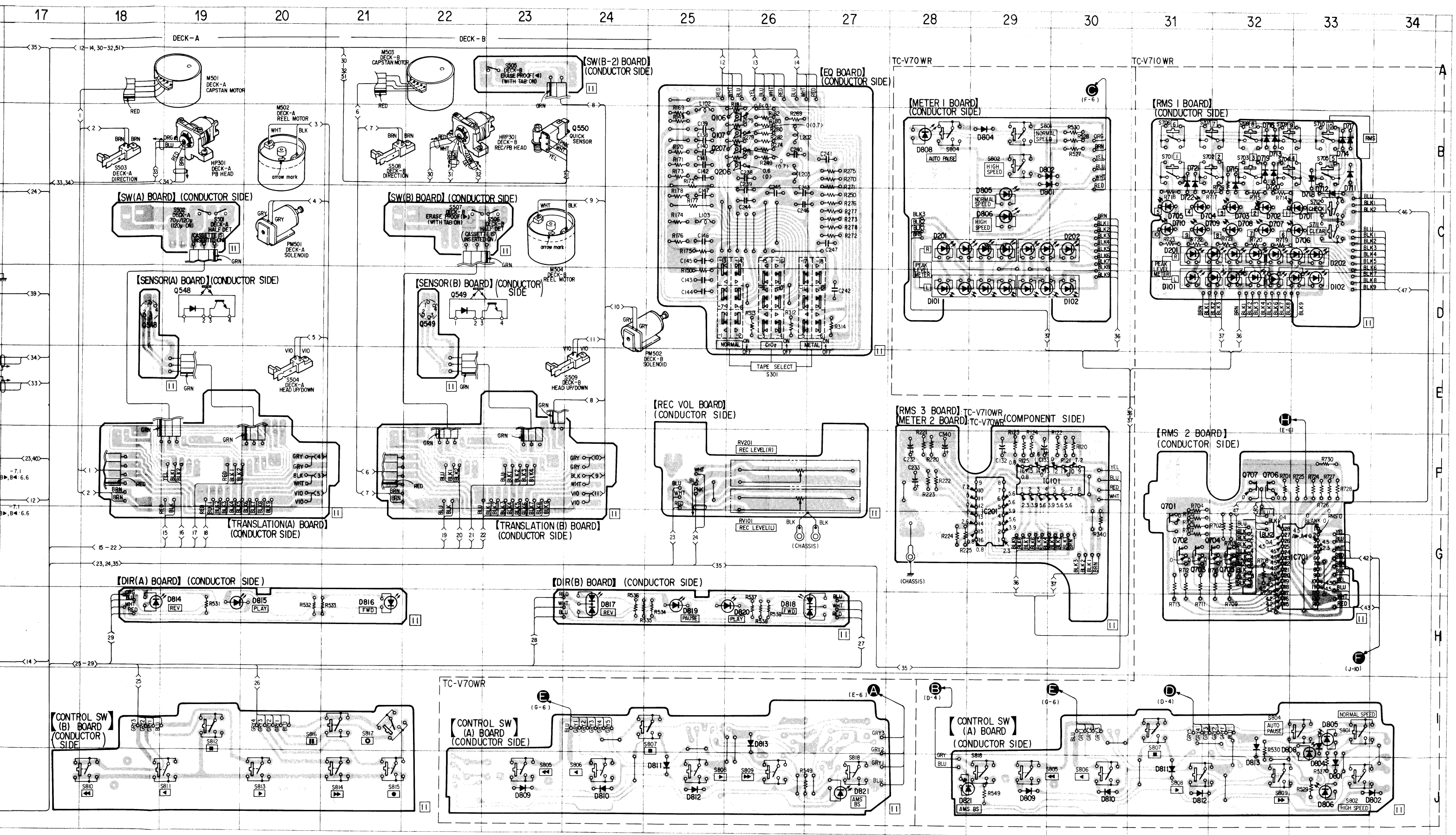
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	D-28	D708	C-32	IC307	E-13	Q520	E-8
	D-31	D709	C-31	IC308	H-16	Q521	E-8
D102	D-30	D710	C-31	IC501	G-9	Q522	F-8
	D-33	D711	B-33	IC502	H-11	Q523	F-8
D201	C-28	D712	B-33	IC503	H-8	Q524	F-8
	D-31	D713	B-32	IC701	G-33	Q525	G-8
D202	C-30	D714	B-33	Q101	C-15	Q526	G-8
	D-33	D715	B-32	Q102	C-13	Q527	G-8
D301	E-15	D716	B-32	Q103	F-15	Q528	F-10
D302	G-14	D717	B-33	Q104	F-15	Q529	F-10
D303	B-8	D718	C-33	Q105	F-12	Q530	I-11
D304	B-8	D719	B-32	Q106	B-26	Q531	I-8
D305	B-8	D720	B-32	Q107	B-26	Q533	I-10
D306	B-8	D721	C-31	Q201	C-15	Q534	I-12
D307	C-10	D722	C-31	Q202	C-13	Q535	I-10
D308	C-9	D801	B-29	Q203	D-15	Q536	I-9
D309	C-8		J-33	Q204	D-15	Q538	H-11
D310	C-9	D802	B-29	Q205	D-12	Q539	G-10
D312	D-7		J-33	Q206	B-26	Q540	H-11
D313	D-7	D804	B-29	Q207	B-26	Q541	G-11
D314	C-9		I-33	Q301	F-15	Q542	G-10
D315	C-9	D805	C-29	Q302	H-13	Q543	I-8
D316	D-7		I-33	Q303	H-13	Q544	F-11
D317	D-7	D806	C-29	Q304	G-13	Q545	G-11
D502	D-10		J-33	Q305	G-12	Q546	F-11
D503	F-10	D808	B-28	Q306	G-14	Q547	F-11
D504	D-9		I-33	Q307	F-4	Q548	D-18
D505	D-9	D809	J-23	Q308	C-10	Q549	D-22
D506	E-10		J-29	Q309	C-10	Q550	B-23
D507	F-7	D810	J-24	Q310	B-10	Q551	F-11
D508	D-8		J-30	Q311	B-10	Q552	G-8
D509	G-7	D811	J-25	Q312	E-4	Q554	H-8
D510	D-8		J-31	Q313	G-4	Q555	I-8
D513	C-11	D812	J-25	Q314	E-14	Q556	H-7
D515	I-9		J-31	Q318	C-8	Q558	H-11
D516	H-11	D813	I-26	Q501	F-10	Q559	F-8
D517	H-10		I-32	Q502	F-11	Q560	F-9
D518	I-7	D814	H-18	Q503	E-10	Q561	F-9
D519	I-7	D815	H-19	Q504	E-10	Q562	G-10
D520	I-8	D816	H-21	Q505	D-10	Q564	F-9
D521	G-8	D817	H-24	Q506	D-10	Q565	E-7
D522	H-8	D818	H-27	Q507	E-11	Q566	E-7
D523	G-7	D819	H-25	Q508	E-10	Q567	G-10
D526	E-7	D820	H-26	Q509	E-8	Q568	H-10
D527	G-11	D821	J-28	Q510	E-8	Q701	G-31
D528	G-15		J-27	Q511	E-8	Q702	G-31
D529	G-8		F-29	Q512	E-8	Q703	G-31
D701	C-33	IC101	G-29	Q513	D-8	Q704	G-32
D702	C-32	IC201	C-16	Q514	D-9	Q705	G-32
D703	C-31	IC302	C-14	Q515	E-9	Q706	F-32
D704	C-31	IC303	B-13	Q516	E-9	Q707	F-32
D705	C-31	IC304	F-16	Q517	E-9		
D706	C-33	IC305	E-16	Q518	D-8		
D707	C-32	IC306	H-15	Q519	D-9		



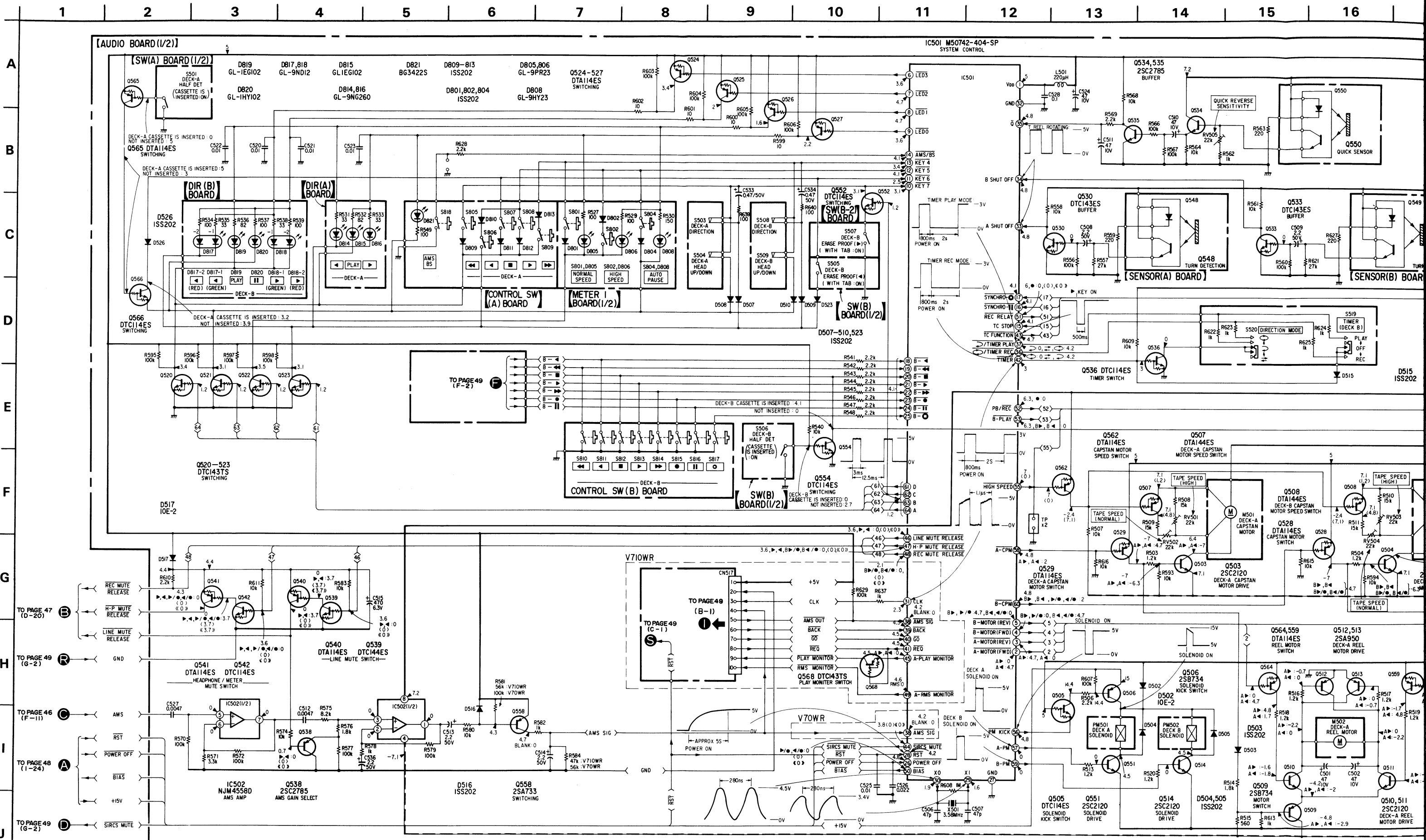


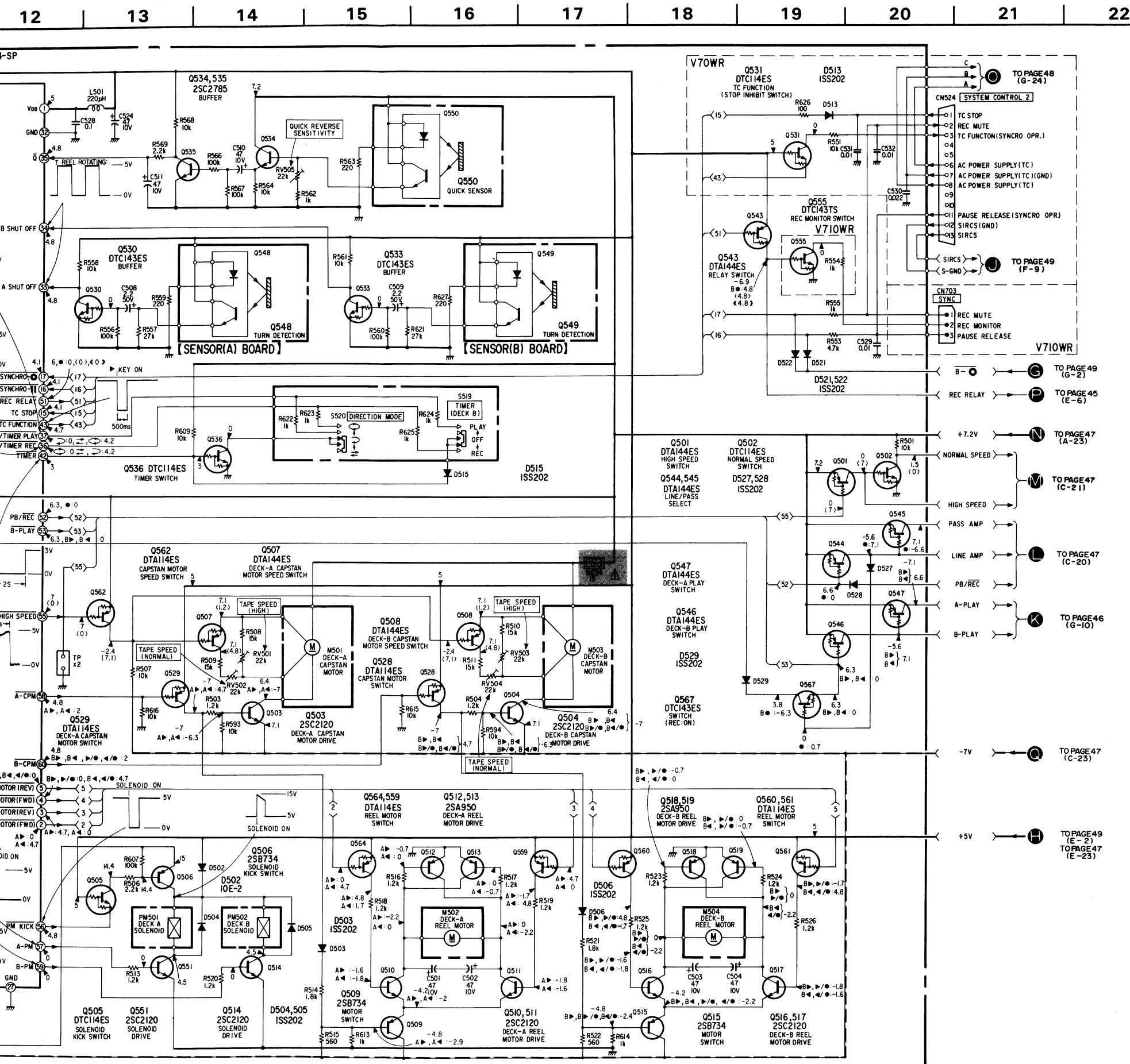






4.2. SCHEMATIC DIAGRAM — SYSTEM CONTROL section —





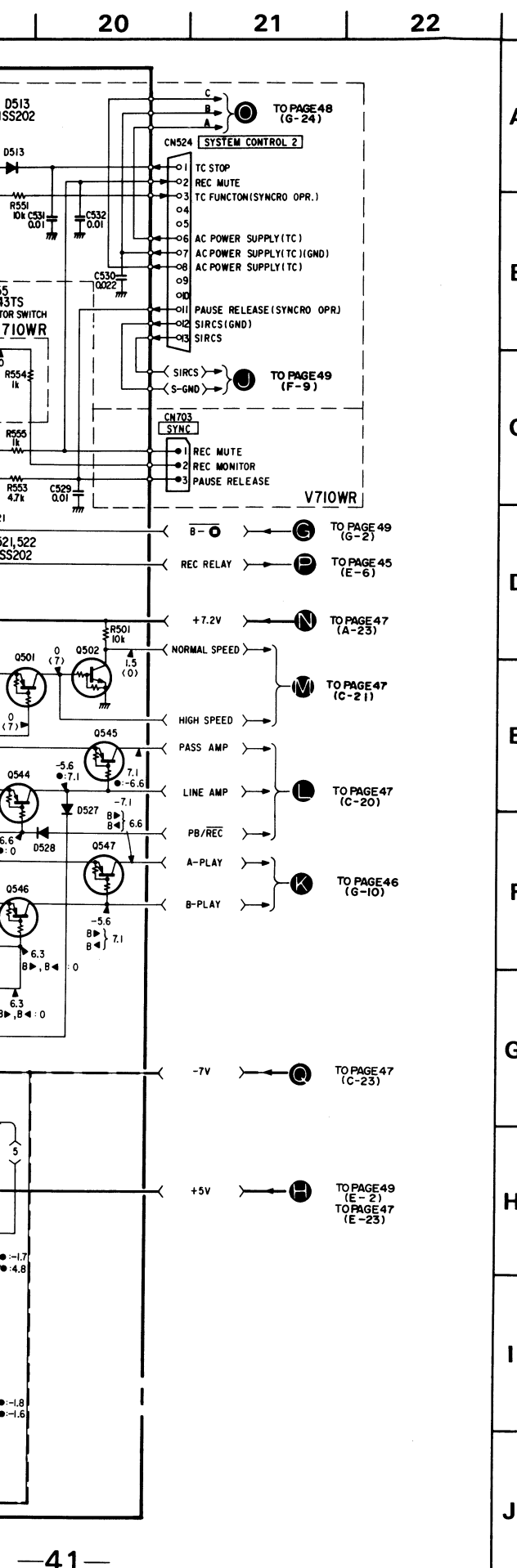
## Note on SYSTEM CONTROL section :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- $\square$  : nonflammable resistor.
- $\text{---}$  : B+ bus.
- $\text{---}$  : B- bus.
- $\square$  : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50  $\text{k}\Omega/\text{V}$ ).
- no mark : STOP
- $<$  : NORMAL SPEED DUBBING
- $>$  : HIGH SPEED DUBBING
- $\blacktriangleright$  : FWD  $\blacktriangleleft$  : REW  $\blacktriangleleft$  : REV
- $\blacktriangleright$  : FF  $\blacktriangleright$  : REC
- Waveform are taken to ground in under no signal conditions by using oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S501	DECK-A HALF DET	OFF
S503	DECK-A DIRECTION	OFF
S504	DECK-A HEAD UP/DOWN	OFF
S505	DECK-B ERASE PROOF ( $\blacktriangleleft$ )	OFF
S506	DECK-B HALF DET	OFF
S507	DECK-B ERASE PROOF ( $\blacktriangleright$ )	OFF
S508	DECK-B DIRECTION	OFF
S509	DECK-B HEAD UP/DOWN	OFF
S519	TIMER (DECK-B)	OFF
S520	DIRECTION MODE	—
S801	NORMAL SPEED	OFF
S802	HIGH SPEED	OFF
S804	AUTO PAUSE	OFF
S805	DECK-A $\blacktriangleleft$	OFF
S806	DECK-A $\blacktriangleleft$	OFF
S807	DECK-A $\blacksquare$	OFF
S808	DECK-A $\blacktriangleright$	OFF
S809	DECK-A $\blacktriangleright$	OFF
S810	DECK-B $\blacktriangleleft$	OFF
S811	DECK-B $\blacktriangleleft$	OFF
S812	DECK-B $\blacksquare$	OFF
S813	DECK-B $\blacktriangleright$	OFF
S814	DECK-B $\blacktriangleright$	OFF
S815	DECK-B $\bullet$	OFF
S816	DECK-B $\blacksquare$	OFF
S817	DECK-B $\circ$	OFF
S818	AMS/BS	OFF

Note: The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



**Note on SYSTEM CONTROL section :**

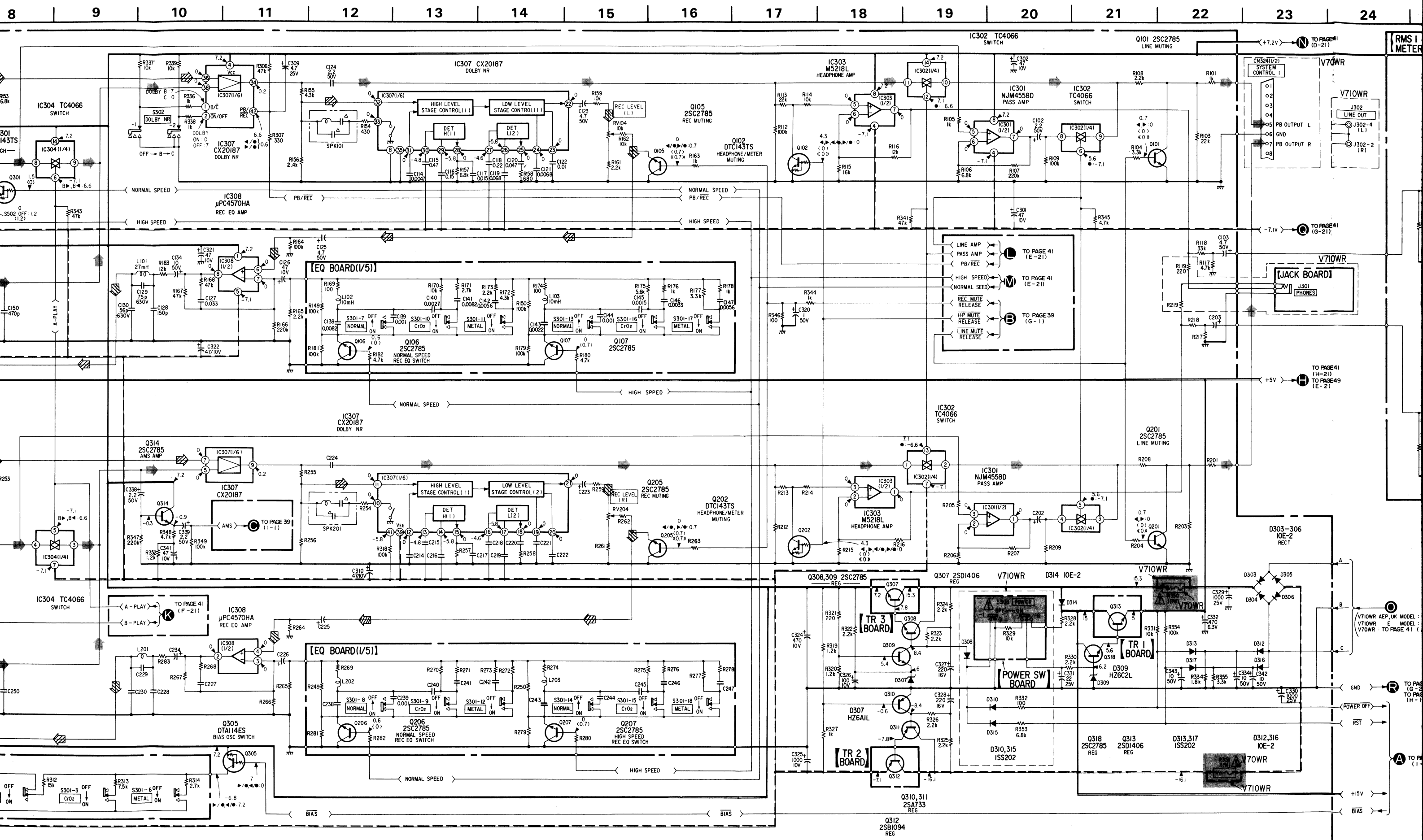
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- : nonflammable resistor.
- : B+ bus.
- : B- bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50  $\text{k}\Omega/\text{V}$ ).
- no mark : STOP
- : NORMAL SPEED DUBBING
- : HIGH SPEED DUBBING
- : FWD : REW : REV
- : FF : REC
- Waveform are taken to ground in under no signal conditions by using oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S501	DECK-A HALF DET	OFF
S503	DECK-A DIRECTION	OFF
S504	DECK-A HEAD UP/DOWN	OFF
S505	DECK-B ERASE PROOF (◀)	OFF
S506	DECK-B HALF DET	OFF
S507	DECK-B ERASE PROOF (▶)	OFF
S508	DECK-B DIRECTION	OFF
S509	DECK-B HEAD UP/DOWN	OFF
S519	TIMER (DECK-B)	OFF
S520	DIRECTION MODE	—
S801	NORMAL SPEED	OFF
S802	HIGH SPEED	OFF
S804	AUTO PAUSE	OFF
S805	DECK-A ◀	OFF
S806	DECK-A ▶	OFF
S807	DECK-A ■	OFF
S808	DECK-A ▶	OFF
S809	DECK-A ▶	OFF
S810	DECK-B ◀	OFF
S811	DECK-B ▶	OFF
S812	DECK-B ■	OFF
S813	DECK-B ▶	OFF
S814	DECK-B ▶	OFF
S815	DECK-B ●	OFF
S816	DECK-B ■	OFF
S817	DECK-B ○	OFF
S818	AMS/BS	OFF

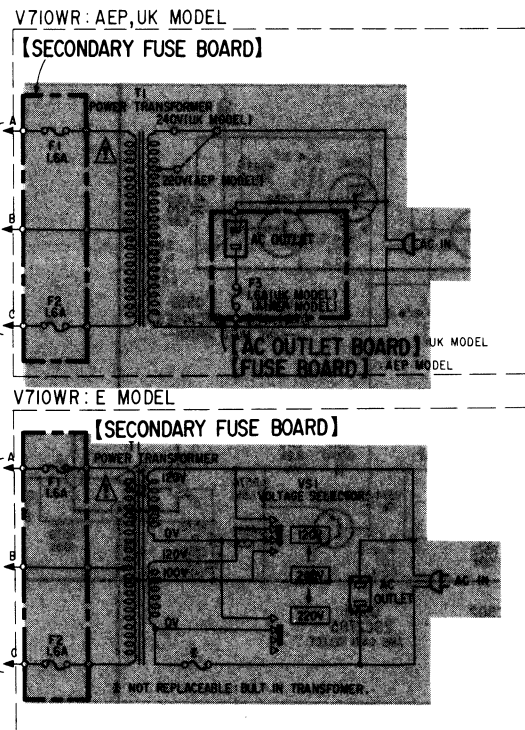
**Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**



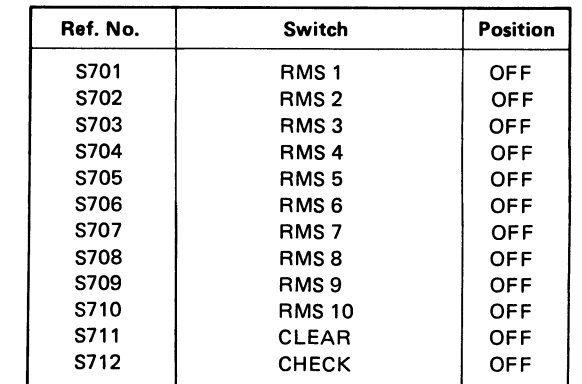








# TC-V70WR/V710WR



# SECTION 5 EXPLODED VIEWS AND PARTS LIST

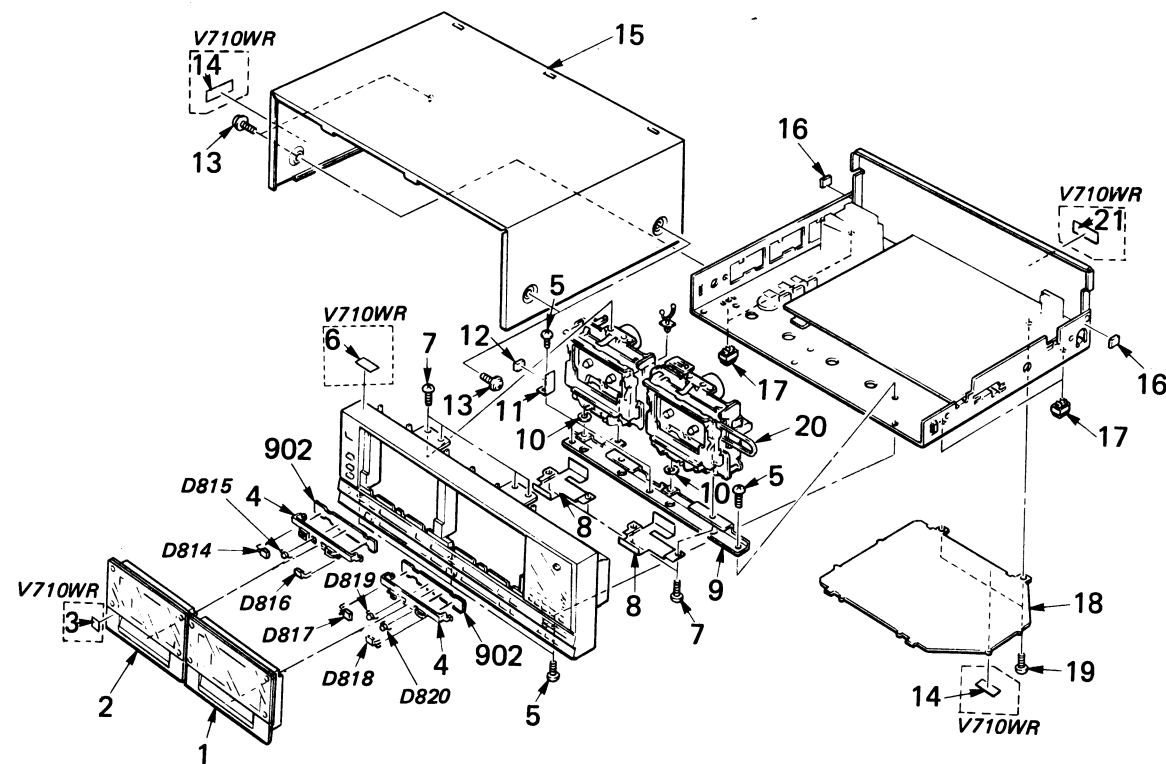
## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

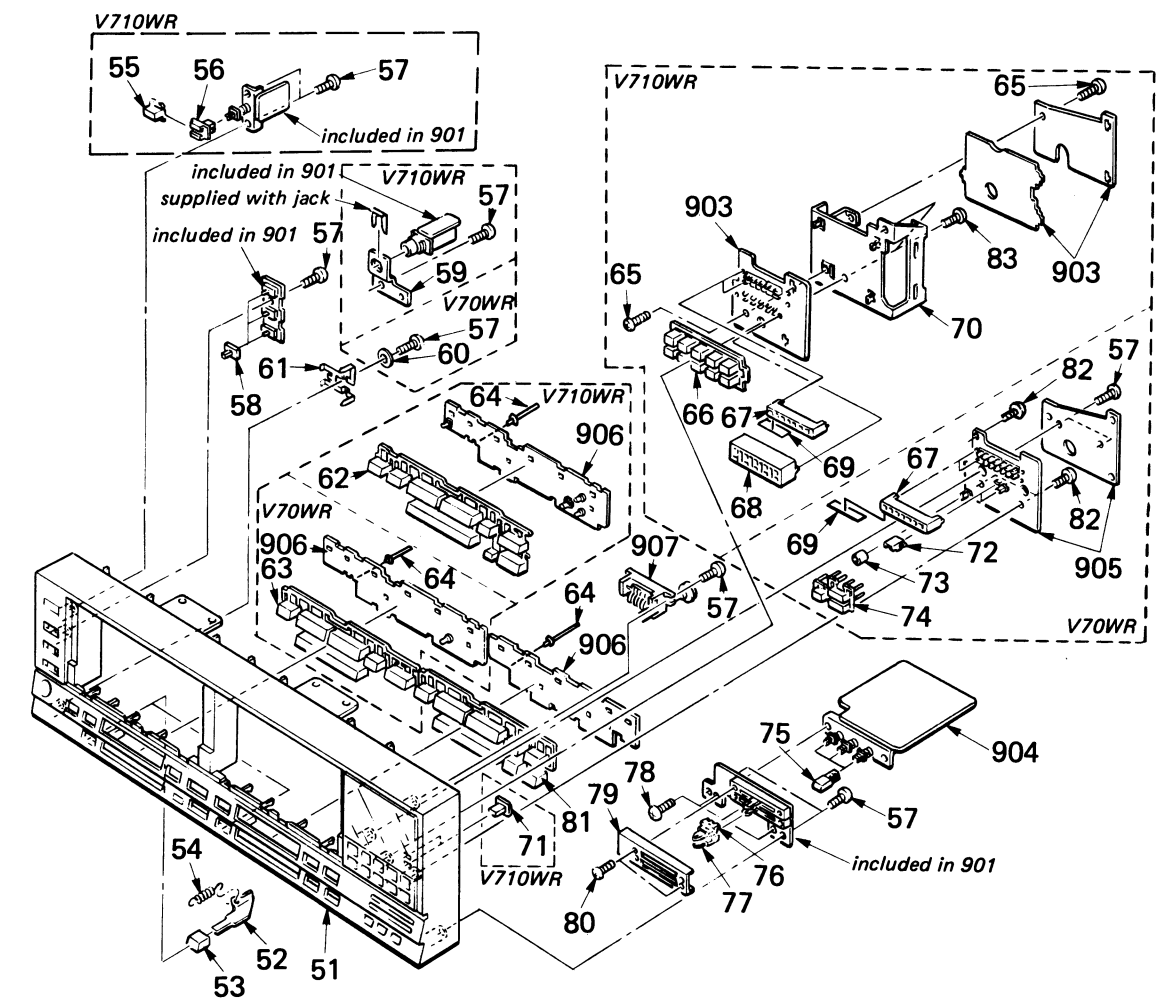
Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(1)



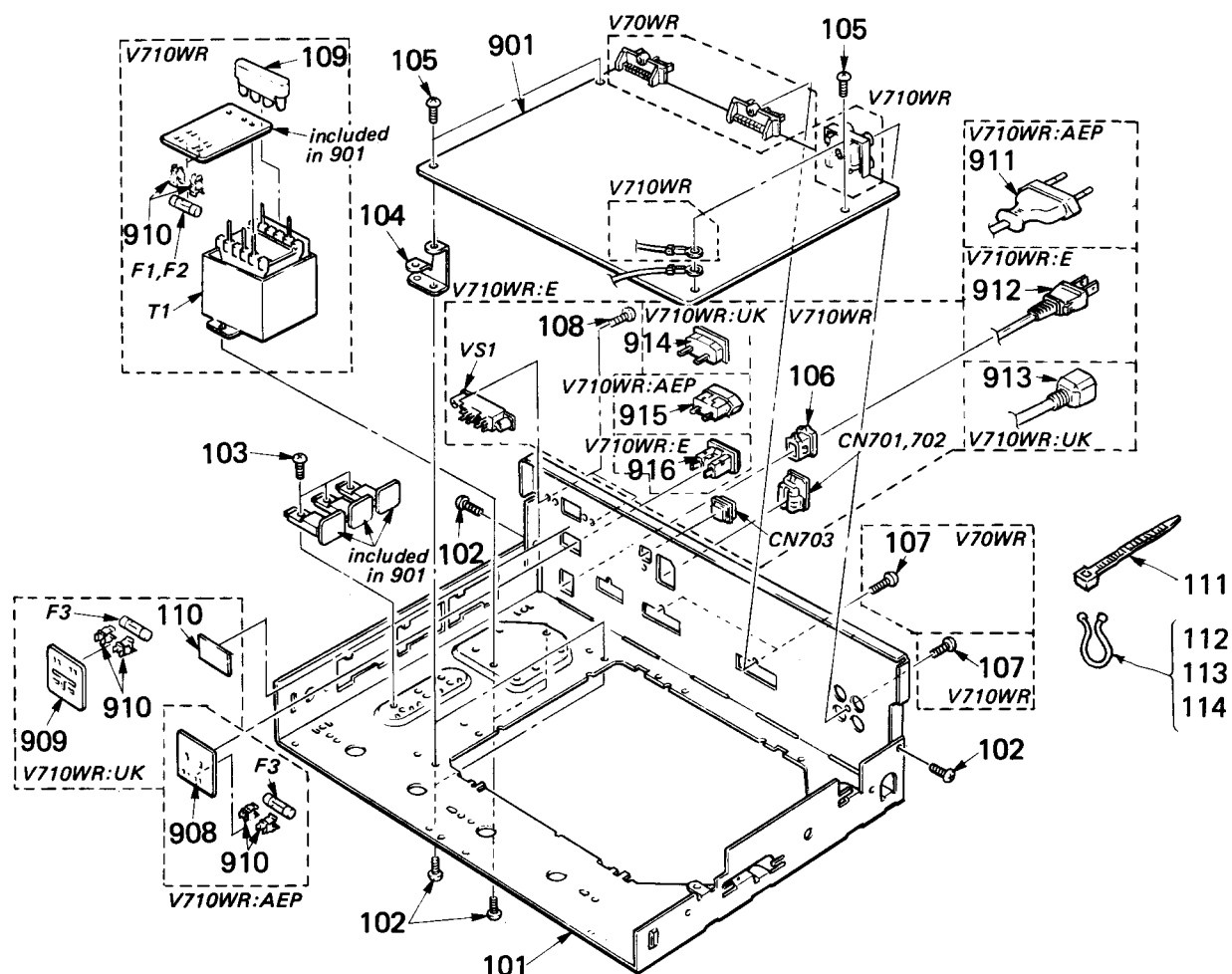
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-3329-910-1	LID (B) ASSY, CASSETTE		16	9-911-840-XX	CUSHION	
2	X-3329-909-2	LID (A) ASSY, CASSETTE		17	X-4907-603-1	FOOT ASSY	
3	3-703-713-41	(TC-V710WR)...STICKER, SONY SYMBOL (10)		18	*3-329-956-01	PC BOARD, BOTTOM	
4	3-329-955-01	HOUSE, LED		19	7-685-752-04	SCREW +BVTT 3X8 (S)	
5	7-685-871-01	SCREW +BVTT 3X6 (S)		20	3-532-213-00	BELT, COUNTER	
6	3-701-690-00	(TC-V710WR:UK)...LABEL (MADE IN JAPAN)		21	3-332-442-01	(TC-V710WR:AEP)...LABEL, APPROVAL BLIND	
7	7-685-871-09	SCREW +BVTT 3X6		902	*A-2056-314-A	PC BOARD ASSY, DIR	
8	*3-329-951-01	PLATE, SHIELD, HEAD			*1-618-747-11	PC BOARD, DIR	
9	*3-329-954-01	BRACKET, MD		D814	8-719-919-20	DIODE GL-9NG260	
10	*3-329-980-01	SHEET, MD		D815	8-719-918-67	DIODE GL-1EG102	
11	*3-329-978-01	PLATE, SHIELD		D816	8-719-919-20	DIODE GL-9NG260	
12	9-911-842-XX	CUSHION (F)		D817	8-719-936-63	DIODE GL-9ND002	
13	4-886-821-01	SCREW, M3 CASE		D818	8-719-936-63	DIODE GL-9ND002	
14	3-703-079-21	(TC-V710WR:UK)...LABEL, CAUTION (BACK)		D819	8-719-918-67	DIODE GL-1EG102	
15	3-329-967-01	CASE		D820	8-719-918-66	DIODE GL-1HY102	

(2)




No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	X-3323-410-1	(TC-V70WR)...PANEL ASSY (EXP), FRONT		70	*3-329-960-01	(TC-V710WR)...HOLDER, PC BOARD	
	X-3329-911-1	(TC-V710WR)...PANEL ASSY, FRONT		71	3-329-946-01	(TC-V710WR)...KNOB, CLEAR	
52	3-329-953-01	SLIDER, EJECT		72	*4-906-216-01	(TC-V70WR)...HOLDER (B), LED	
53	3-329-952-01	BUTTON, EJECT		73	*3-325-014-01	(TC-V70WR)...SPACER, LED	
54	4-885-182-11	SPRING, TENSION		74	3-325-018-01	(TC-V70WR)...BUTTON, DUBBING	
55	4-907-611-01	(TC-V710WR)...KNOB, POWER		75	3-329-949-01	KNOB, TAPE SELECT	
56	4-875-466-00	(TC-V710WR)...JOINT (F2), KNOB		76	3-329-961-01	KNOB (LEFT), VOL	
57	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S		77	3-329-962-01	KNOB (RIGHT), VOL	
58	3-323-415-01	KNOB, SWITCH TIMER		78	7-685-871-01	SCREW +BVTT 3X6 (S)	
59	*3-329-948-01	(TC-V710WR)...BRACKET, HPJ		79	*3-329-957-01	PLATE (L), SHIELD	
60	4-836-939-00	(TC-V70WR)...WASHER, 3.1		80	7-627-553-17	SCREW, PRECISION +P 2X2	
61	3-329-973-01	SPRING		81	3-329-966-01	BUTTON (B), CONTROL	
62	X-3329-908-1	(TC-V710WR)...BUTTON (A) ASSY(1), CONTROL		82	7-685-134-19	(TC-V70WR)...SCREW +BTP 2.6X8 TYPE2 N-S	
63	X-3313-214-1	(TC-V70WR)...BUTTON (A) ASSY(2), CONTROL		83	...	...	
64	*4-352-844-01	PIN, LEAD, COATING		903	*A-2056-316-A	(TC-V710WR)...PC BOARD ASSY, RMS	
65	7-685-862-01	(TC-V710WR)...SCREW +BVTT 2.6X6 (S)		904	*A-2056-313-A	PC BOARD ASSY, EQ	
66	3-329-959-01	(TC-V710WR)...KNOB, 10 KEY			*1-618-743-11	PC BOARD, EQ	
67	4-906-205-01	HOLDER (A), LED		905	*1-618-746-11	(TC-V70WR)...PC BOARD, METER	
68	*3-329-958-01	(TC-V710WR)...HOLDER, 10 KEY		906	*1-618-744-11	PC BOARD, CONTROL SWITCH	
69	9-911-839-XX	CUSHION (A), MD KNOB		907	*1-548-596-11	COUNTER, TAPE (MIDDLE TYPE)	

(3)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	*3-329-968-11	(TC-V710WR:E)....CHASSIS		908	*1-615-062-11	(TC-V710WR:AEP)...PC BOARD, FUSE	
	3-329-968-21	(TC-V710WR:AEP)...CHASSIS		909	*1-618-748-11	(TC-V710WR:UK)....PC BOARD, AC OUTLET	
	3-329-968-31	(TC-V710WR:UK)....CHASSIS		910	1-533-162-00	(TC-V710WR).....HOLDER, FUSE	
	3-329-968-51	(TC-V70WR).....CHASSIS		911	△1-551-427-11	(TC-V710WR:AEP)...CORD, POWER EURO PLUG	
102	7-685-752-04	SCREW +BVTT 3X8 (S)		912	△1-551-479-00	(TC-V710WR:E)....CORD, POWER	
103	7-685-871-01	SCREW +BVTT 3X6 (S)		913	△1-556-560-00	(TC-V710WR:UK)....CORD, POWER	
104	*3-329-950-01	BRACKET, PC BOARD		914	△1-526-751-11	(TC-V710WR:UK)....OUTLET, AC	
105	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6		915	△1-526-794-11	(TC-V710WR:AEP)...OUTLET, AC	
106	3-703-244-00	(TC-V710WR:AEP,UK)...BUSHING (2104), CORD		916	△1-526-609-00	(TC-V710WR:E)....CONNECTOR, AC OUTLET	
	3-703-571-00	(TC-V710WR:E)...BUSHING (S)(4516), CORD		CN701	*1-558-235-11	(TC-V710WR)...CORD (WITH CONNECTOR)	
107	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S				(REMOTE IN)	
108	.....	(TC-V710WR)...SCREW +BVTP 2.6X8		CN702	*1-558-235-11	(TC-V710WR)...CORD (WITH CONNECTOR)	
109	*3-332-444-01	COVER, TRANSFORMER SAFETY				(REMOTE OUT)	
110	*4-909-528-01	INSULATOR		CN703	1-558-520-31	(TC-V710WR)...CORD (WITH CONNECTOR) 3P	
111	3-701-748-00	CLAMP				(SYNC)	
112	3-701-417-00	PURSE LOCK (11 DIA.)		F1	△1-532-259-00	FUSE, TIME-LAG (1.6A)	
113	2-056-666-00	PURSE LOCK (8 DIA.)		F2	△1-532-259-00	FUSE, TIME-LAG (1.6)	
114	3-315-159-00	PURSE LOCK (14 DIA.)		F3	△1-532-078-00	(TC-V710WR:AEP)...FUSE, TIME LAG (1A)	
901	*A-2056-309-A	(TC-V70WR)...MOUNTED PCB, AUDIO		F3	△1-532-259-00	(TC-V710WR:UK)....FUSE, TIME LAG (1.6A)	
	*A-2056-312-A	(TC-V710WR)...MOUNTED PCB, AUDIO		T1	△1-448-377-11	(TC-V710WR:AEP)...TRANSFORMER, POWER	
				T1	△1-448-378-11	(TC-V710WR:E)....TRANSFORMER, POWER	
				VS1	△1-570-307-11	(TC-V710WR:E)...SWITCH, VOLTAGE CHANGE	

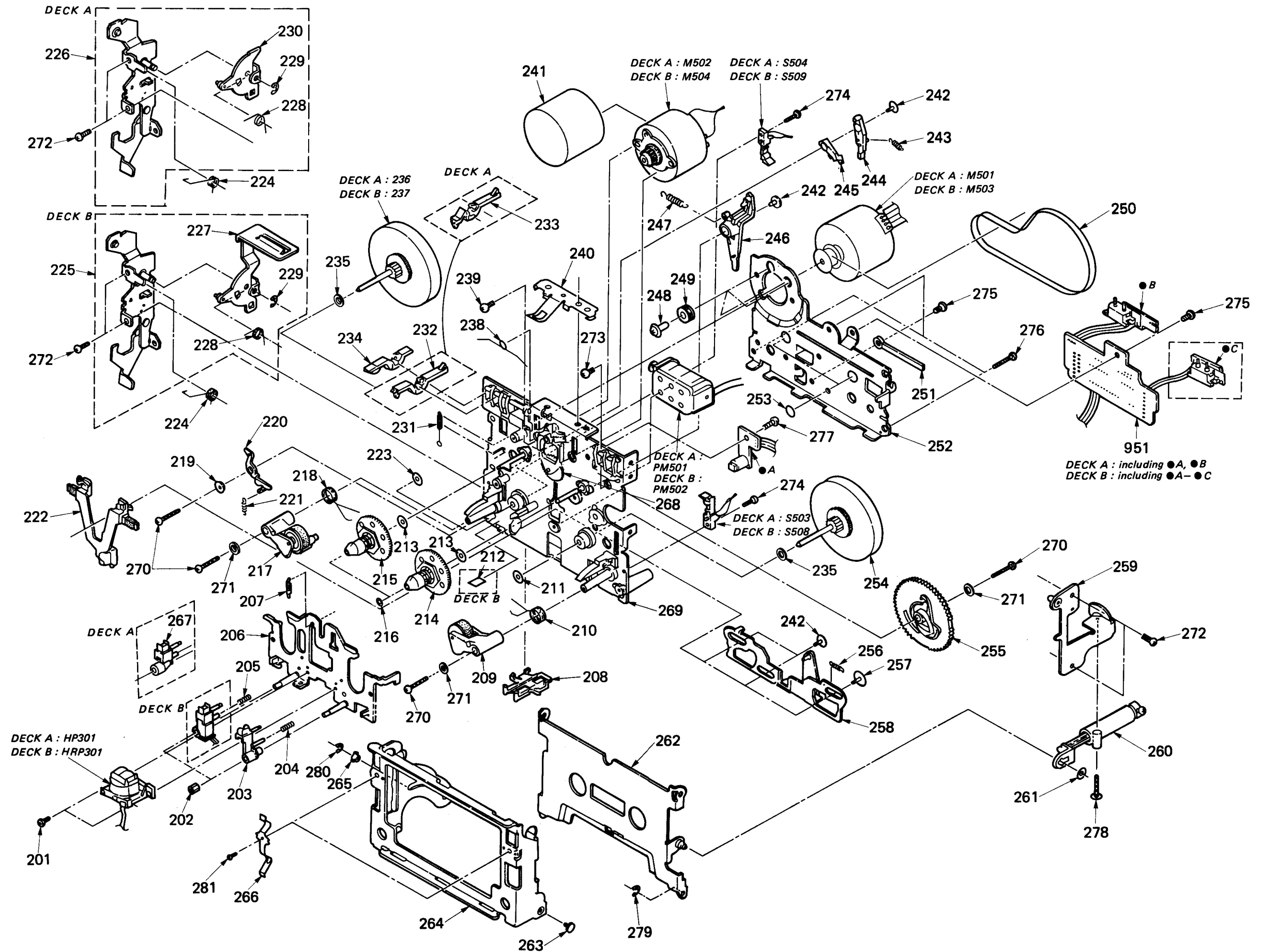
The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	3-391-109-01	SCREW, WASHER		249	3-391-138-01	MOTOR CUSHION	
202	3-391-110-01	NUT, ADJUSTMENT		250	3-391-134-01	BELT, MAIN	
203	3-391-111-01	GUIDE, TAPE		251	3-701-822-00	HOLDER, WIRE	
204	3-391-112-01	SPRING (RIGHT)		252	*3-391-130-01	BRACKET (B), F/W	
205	3-391-113-01	SPRING (LEFT)		253	3-391-129-01	SPACER	
206	X-3391-103-1	PLATE ASSY, HEAD		254	X-3391-113-1	F/W ASSY	
207	3-391-114-01	SPRING		255	3-391-128-01	GEAR (B), CAM	
208	3-391-137-01	HOLDER, LEAD		256	3-391-127-01	SPRING	
209	X-3391-104-1	PINCH ROLLER ASSY		257	3-391-143-01	CAP	
210	3-391-115-01	SPRING (RIGHT)		258	X-3391-112-1	PLATE ASSY, SLIDE	
211	3-391-119-01	WASHER, OIL SEAL		259	*3-391-144-01	BRACKET (R), DAMPER	
212	3-391-162-01	(DECK B)...REFLECTOR		260	*X-3391-115-1	DAMPER ASSY	
213	3-327-708-31	WASHER		261	*3-391-148-01	WASHER LOCK	
214	X-3391-107-1	REEL ASSY, T.U		262	3-391-149-01	PLATE, ORNAMENTAL	
215	X-3391-106-1	REEL ASSY		263	3-391-152-01	STUD, DOOR	
216	3-701-436-11	WASHER, 1.6		264	3-391-150-01	HOLDER, CASSETTE	
217	X-3391-105-1	PINCH ROLLER ASSY		265	3-391-153-01	ROLLER	
218	3-391-116-01	SPRING (LEFT)		266	3-391-151-01	SPRING	
219	3-391-120-01	CALLOR		267	3-391-156-01	(DECK B)...HOLDER, SENSOR	
220	3-391-121-01	ARM, EJECT SAFETY		268	X-3391-111-1	IDLER ASSY	
221	3-391-122-01	SPRING (A)		269	X-3391-110-1	CHASSIS ASSY	
222	X-3391-108-1	BRAKE ASSY		270	7-685-107-21	SCREW +P 2X12 TYPE2 SLIT	
223	3-391-117-01	SEAL, WASHER OIL		271	7-688-001-11	W 2, MIDDLE	
224	3-391-154-01	SPRING (A)		272	7-685-790-04	SCREW +PTT 2.6X4 (S)	
225	X-3391-126-1	(DECK B)...ARM ASSY, EJECT	228-230	273	7-628-253-95	SCREW +PS 2.6X4	
226	X-3391-116-1	(DECK A)...ARM ASSY, EJECT		274	7-685-104-14	SCREW +P 2X6 TYPE2 SLIT	
227	3-391-163-01	(DECK B)...LEVER (B), EJECT		275	7-685-781-04	SCREW +BVTT 2X4 (S)	
228	3-391-146-01	SPRING (B)		276	7-685-131-19	SCREW +P 2.6X4 TYPE2 NON-SLIT	
229	7-624-105-04	STOP RING 2.3, TYPE -E		277	7-685-105-14	SCREW +P 2X8 TYPE2 SLIT	
230	*3-391-145-01	(DECK A)...LEVER (B), EJECT		278	7-621-955-75	SCREW, TOTSU PWM 2X12	
231	3-391-139-01	SPRING		279	7-624-102-04	STOP RING 1.5, TYPE -E	
232	3-391-157-01	(DECK B)...LEVER, REC INSPECTION		280	7-624-104-04	STOP RING 2.0, TYPE -E	
233	*3-391-155-01	(DECK A)...LEVER, CHROME INSPECTION		281	7-685-780-01	SCREW +PTT 2X3 (S)	
234	3-391-131-01	LEVER, PACK INSPECTION		HP301	X-3391-102-1	(DECK A)...HEAD ASSY, ROTARY	
235	3-701-438-11	WASHER, 2.5		HRP301	X-3391-123-1	(DECK B)...HEAD ASSY, ROTARY	
236	X-3391-109-1	(DECK A)...F/W ASSY		M501	X-3391-117-1	(DECK A)...MOTOR ASSY, CAPSTAN	
237	X-3391-125-1	(DECK B)...F/W ASSY		M502	X-3391-118-1	(DECK A)...MOTOR ASSY, REEL	
238	3-391-124-01	SPRING		M503	X-3391-117-1	(DECK B)...MOTOR ASSY, CAPSTAN	
239	3-391-118-01	SCREW, WASHER		M504	X-3391-118-1	(DECK B)...MOTOR ASSY, REEL	
240	3-391-125-01	SPRING		PM501	1-454-428-11	(DECK A)...SOLENOID, PLUNGER	
241	3-391-132-01	PLATE, SHIELD		PM502	1-454-428-11	(DECK B)...SOLENOID, PLUNGER	
242	3-391-126-01	CAP		Q550	8-729-900-74	(DECK B)...Q SENSOR ASSY	
243	3-391-140-01	SPRING (A)		S503	1-570-719-11	(DECK A)...SWITCH, LEAF	
244	3-391-142-01	ARM (B)		S504	1-570-721-11	(DECK A)...SWITCH, LEAF	
245	3-391-141-01	ARM (A)		S508	1-570-719-11	(DECK B)...SWITCH, LEAF	
246	X-3391-114-1	ARM ASSY, PLAY		S509	1-570-721-11	(DECK B)...SWITCH, LEAF	
247	3-391-133-01	SPRING					
248	3-391-147-01	SCREW, MOTOR FITTING					

**TC-V7OWR/V71OWR TC-V7OWR/V71OWR**

(4)



SECTION 6  
ELECTRICAL PARTS LIST

## NOTE:

Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:  
MF:μF, PF:μF.

## RESISTORS

All resistors are in ohms.  
F : nonflammable


## COILS


MMH : mH, UH : μH

## SEMICONDUCTORS







In each case, U : μ, for example:

UA...: μA..., UPA...: μPA..., UPC...: μPC,  
UPD...: μPD...

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*A-2056-309-A	(TC-V70WR)...MOUNTED PCB, AUDIO
	*A-2056-312-A	(TC-V710WR)...MOUNTED PCB, AUDIO
902	*A-2056-314-A	PC BOARD ASSY, DIR
	*1-618-747-11	PC BOARD, DIR
903	*A-2056-316-A	(TC-V710WR)...PC BOARD ASSY, RMS
904	*A-2056-313-A	PC BOARD ASSY, EQ
	*1-618-743-11	PC BOARD, EQ
905	*1-618-746-11	(TC-V70WR)...PC BOARD, METER
906	*1-618-744-11	PC BOARD, CONTROL SWITCH
907	*1-548-596-11	COUNTER, TAPE (MIDDLE TYPE)
908	*1-615-062-11	(TC-V710WR:AEP)...PC BOARD, FUSE
909	*1-618-748-11	(TC-V710WR:UK)...PC BOARD, AC OUTLET
910	1-533-162-00	(TC-V710WR)...HOLDER, FUSE
911	 1-551-427-11	(TC-V710WR:AEP)...CORD, POWER EURO PLUG
912	 1-551-479-00	(TC-V710WR:E)...CORD, POWER
913	 1-556-560-00	(TC-V710WR:UK)...CORD, POWER
914	 1-526-751-11	(TC-V710WR:UK)...OUTLET, AC
915	 1-526-794-11	(TC-V710WR:AEP)...OUTLET, AC
916	 1-526-609-00	(TC-V710WR:E)...CONNECTOR, AC OUTLET
C101	1-124-927-11	ELECT 4.7MF 20% 50V
C102	1-124-904-00	ELECT 2.2MF 20% 50V
C103	1-124-927-11	ELECT 4.7MF 20% 50V
C104	1-162-289-31	CERAMIC 390PF 10% 50V
C105	1-136-157-00	FILM 0.022MF 5% 50V
C106	1-124-183-00	ELECT 2.2MF 20% 50V
C107	1-110-203-00	MYLAR 0.0047MF 5% 50V
C108	1-162-303-31	CERAMIC 0.0033MF 30% 16V
C109	1-162-289-31	CERAMIC 390PF 10% 50V
C110	1-136-157-00	FILM 0.022MF 5% 50V
C111	1-124-183-00	ELECT 2.2MF 20% 50V
C112	1-162-304-31	CERAMIC 0.0047MF 30% 16V
C113	1-124-904-00	ELECT 2.2MF 20% 50V
C114	1-110-203-00	MYLAR 0.0047MF 5% 50V
C115	1-136-173-00	FILM 0.47MF 5% 50V
C116	1-136-167-00	FILM 0.15MF 5% 50V
C117	1-136-155-00	FILM 0.015MF 5% 50V
C118	1-136-169-00	FILM 0.22MF 5% 50V
C119	1-136-163-00	FILM 0.068MF 5% 50V
C120	1-136-161-00	FILM 0.047MF 5% 50V
C121	1-110-205-00	MYLAR 0.0068MF 5% 50V
C122	1-136-153-00	FILM 0.01MF 5% 50V
C123	1-124-927-11	ELECT 4.7MF 20% 50V
C124	1-124-183-00	ELECT 2.2MF 20% 50V
C125	1-124-927-11	ELECT 4.7MF 20% 50V
C126	1-124-892-11	ELECT 47MF 20% 10V
C127	1-136-159-00	FILM 0.033MF 5% 50V

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
C128	1-162-284-31	CERAMIC 150PF 10% 50V
C129	1-136-273-91	FILM 75PF 5% 630V
C130	1-136-271-00	FILM 56PF 5% 630V
C132	1-123-612-00	ELECT 2.2MF 20% 50V
C133	1-123-611-00	ELECT 1MF 20% 50V
C134	1-124-907-00	ELECT 10MF 20% 50V
C138	1-110-206-00	MYLAR 0.0082MF 5% 50V
C139	1-110-195-00	MYLAR 0.001MF 5% 50V
C140	1-110-200-00	MYLAR 0.0027MF 5% 50V
C141	1-110-206-00	MYLAR 0.0082MF 5% 50V
C142	1-110-204-00	MYLAR 0.0056MF 5% 50V
C143	1-110-199-00	MYLAR 0.0022MF 5% 50V
C144	1-110-195-00	MYLAR 0.001MF 5% 50V
C145	1-110-197-00	MYLAR 0.0015MF 5% 50V
C146	1-110-201-00	MYLAR 0.0033MF 5% 50V
C147	1-110-204-00	MYLAR 0.0056MF 5% 50V
C148	1-162-282-31	CERAMIC 100PF 10% 50V
C149	1-162-282-31	CERAMIC 100PF 10% 50V
C150	1-162-290-31	CERAMIC 470PF 10% 50V
C201	1-124-927-11	ELECT 4.7MF 20% 50V
C202	1-124-904-00	ELECT 2.2MF 20% 50V
C203	1-124-927-11	ELECT 4.7MF 20% 50V
C204	1-162-289-31	CERAMIC 390PF 10% 50V
C205	1-136-157-00	FILM 0.022MF 5% 50V
C206	1-124-183-00	ELECT 2.2MF 20% 50V
C207	1-110-203-00	MYLAR 0.0047MF 5% 50V
C208	1-162-303-31	CERAMIC 0.0033MF 30% 16V
C209	1-162-289-31	CERAMIC 390PF 10% 50V
C210	1-136-157-00	FILM 0.022MF 5% 50V
C211	1-124-183-00	ELECT 2.2MF 20% 50V
C212	1-162-304-31	CERAMIC 0.0047MF 30% 16V
C213	1-124-904-00	ELECT 2.2MF 20% 50V
C214	1-110-203-00	MYLAR 0.0047MF 5% 50V
C215	1-136-173-00	FILM 0.47MF 5% 50V
C216	1-136-167-00	FILM 0.15MF 5% 50V
C217	1-136-155-00	FILM 0.015MF 5% 50V
C218	1-136-169-00	FILM 0.22MF 5% 50V
C219	1-136-163-00	FILM 0.068MF 5% 50V
C220	1-136-161-00	FILM 0.047MF 5% 50V
C221	1-110-205-00	MYLAR 0.0068MF 5% 50V
C222	1-136-153-00	FILM 0.01MF 5% 50V
C223	1-124-927-11	ELECT 4.7MF 20% 50V
C224	1-124-183-00	ELECT 2.2MF 20% 50V
C225	1-124-927-11	ELECT 4.7MF 20% 50V
C226	1-124-892-11	ELECT 47MF 20% 10V
C227	1-136-159-00	FILM 0.033MF 5% 50V

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
C228	1-162-284-31	CERAMIC 150PF 10% 50V
C229	1-136-273-91	FILM 75PF 5% 630V
C230	1-136-271-00	FILM 56PF 5% 630V
C232	1-123-612-00	ELECT 2.2MF 20% 50V
C233	1-123-611-00	ELECT 1MF 20% 50V
C234	1-124-907-00	ELECT 10MF 20% 50V
C238	1-110-206-00	MYLAR 0.0082MF 5% 50V
C239	1-110-195-00	MYLAR 0.001MF 5% 50V
C240	1-110-200-00	MYLAR 0.0027MF 5% 50V
C241	1-110-206-00	MYLAR 0.0082MF 5% 50V
C242	1-110-204-00	MYLAR 0.0056MF 5% 50V
C243	1-110-199-00	MYLAR 0.0022MF 5% 50V
C244	1-110-195-00	MYLAR 0.001MF 5% 50V
C245	1-110-197-00	MYLAR 0.0015MF 5% 50V
C246	1-110-201-00	MYLAR 0.0033MF 5% 50V
C247	1-110-204-00	MYLAR 0.0056MF 5% 50V
C248	1-162-282-31	CERAMIC 100PF 10% 50V
C249	1-162-282-31	CERAMIC 100PF 10% 50V
C250	1-162-290-31	CERAMIC 470PF 10% 50V
C301	1-124-892-11	ELECT 47MF 20% 10V
C302	1-124-892-11	ELECT 47MF 20% 10V
C305	1-124-444-00	ELECT 220MF 20% 10V
C306	1-124-444-00	ELECT 220MF 20% 10V
C307	1-124-444-00	ELECT 220MF 20% 10V
C308	1-124-444-00	ELECT 220MF 20% 10V
C309	1-124-927-11	ELECT 4.7MF 20% 50V
C310	1-124-892-11	ELECT 47MF 20% 10V
C311	1-124-892-11	ELECT 47MF 20% 10V
C313	1-130-336-00	FILM 0.0068MF 10% 630V
C314	1-124-904-00	ELECT 2.2MF 20% 50V
C315	1-130-289-00	FILM 0.0047MF 5% 100V
C316	1-130-285-00	FILM 0.0033MF 5% 100V
C317	1-130-285-00	FILM 0.0033MF 5% 100V
C318	1-124-903-00	ELECT 1MF 20% 50V
C319	1-124-927-11	ELECT 4.7MF 20% 50V
C320	1-124-903-00	ELECT 1MF 20% 50V
C321	1-124-892-11	ELECT 47MF 20% 10V
C322	1-124-892-11	ELECT 47MF 20% 10V
C324	1-124-472-11	ELECT 470MF 20% 10V
C325	1-124-473-11	ELECT 1000MF 20% 10V
C326	1-124-443-00	ELECT 100MF 20% 10V
C327	1-123-321-00	ELECT 220MF 20% 16V
C328	1-123-321-00	ELECT 220MF 20% 16V
C329	1-124-557-11	ELECT 1000MF 20% 25V
C330	1-124-557-11	ELECT 1000MF 20% 25V
C331	1-124-481-11	ELECT 22MF 20% 25V
C332	1-124-470-11	ELECT 470MF 20% 6.3V
C334	1-124-907-00	ELECT 10MF 20% 50V
C337	1-124-898-11	ELECT 4700MF 20% 16V
C338	1-124-904-00	ELECT 2.2MF 20% 50V
C339	1-124-904-00	ELECT 2.2MF 20% 50V
C340	1-123-822-00	ELECT 47MF 20% 10V
C341	1-124-892-11	ELECT 47MF 20% 10V
C342	1-124-907-00	ELECT 10MF 20% 50V
C343	1-124-907-00	ELECT 10MF 20% 50V
C501	1-124-892-11	ELECT 47MF 20% 10V
C502	1-124-892-11	ELECT 47MF 20% 10V
C503	1-124-892-11	ELECT 47MF 20% 10V

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
C504	1-124-892-11	ELECT 47MF 20% 10V
C506	1-162-029-00	CERAMIC 47PF 5% 50V
C507	1-162-029-00	CERAMIC 47PF 5% 50V
C508	1-124-904-00	ELECT 2.2MF 20% 50V
C509	1-124-904-00	ELECT 2.2MF 20% 50V
C510	1-124-892-11	ELECT 47MF 20% 10V
C511	1-124-892-11	ELECT 47MF 20% 10V
C512	1-162-304-31	CERAMIC 0.0047MF 30% 16V
C513	1-124-904-00	ELECT 2.2MF 20% 50V
C514	1-124-904-00	ELECT 2.2MF 20% 50V
C515	1-124-470-11	ELECT 470MF 20% 6.3V
C516	1-124-903-00	ELECT 1MF 20% 50V
C517	1-162-100-00	CERAMIC 150PF 10% 50V
C518	1-162-100-00	CERAMIC 150PF 10% 50V
C519	1-162-294-31	CERAMIC 0.001MF 10% 50V
C520	1-162-306-31	CERAMIC 0.01MF 30% 16V
C521	1-162-306-31	CERAMIC 0.01MF 30% 16V
C522	1-162-306-31	CERAMIC 0.01MF 30% 16V
C523	1-162-306-31	CERAMIC 0.01MF 30% 16V
C524	1-124-892-11	ELECT 47MF 20% 10V
C525	1-162-306-31	CERAMIC 0.01MF 30% 16V
C526	1-161-494-00	CERAMIC 0.022MF 30% 25V
C527	1-162-304-31	CERAMIC 0.0047MF 30% 16V
C528	1-161-974-00	CERAMIC 0.1MF 20% 16V
C529	1-162-306-31	CERAMIC 0.01MF 30% 16V
C530	1-161-494-00	(TC-V70WR)...CERAMIC 0.022MF 30% 25V
C531	1-162-306-31	(TC-V70WR)...CERAMIC 0.01MF 30% 16V
C532	1-162-306-31	(TC-V70WR)...CERAMIC 0.01MF 30% 16V
C533	1-124-902-00	ELECT 0.47MF 20% 50V
C534	1-124-902-00	ELECT 0.47MF 20% 50V
C536	1-124-904-00	ELECT 2.2MF 20% 50V
CN301	*1-564-506-11	PLUG, CONNECTOR 3P
CN302	*1-564-506-11	PLUG, CONNECTOR 3P
CN303	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN304	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P
CN305	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN306	*1-564-507-11	PLUG, CONNECTOR 4P
CN308	*1-564-506-11	PLUG, CONNECTOR 3P
CN309	*1-564-506-11	PLUG, CONNECTOR 3P
CN310	*1-564-507-11	PLUG, CONNECTOR 4P
CN321	*1-564-338-00	(TC-V710WR)...PIN, CONNECTOR 4P
CN322	*1-564-666-11	(TC-V710WR)...PIN, CONNECTOR 10P
CN324	1-562-068-13	(TC-V70WR)...SOCKET, CONNECTOR 13P (SYSTEM CONTROL 1)
CN509	*1-564-507-11	PLUG, CONNECTOR 4P
CN510	*1-564-509-11	PLUG, CONNECTOR 6P
CN511	*1-564-509-11	PLUG, CONNECTOR 6P
CN512	*1-564-507-11	PLUG, CONNECTOR 4P
CN514	*1-564-512-41	PLUG, CONNECTOR 9P
CN515	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN516	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CN517	*1-564-513-11	(TC-V710WR)...PLUG, CONNECTOR 10P
CN524	1-562-068-13	(TC-V70WR)...SOCKET, CONNECTOR 13P (SYSTEM CONTROL 2)
CN701	*1-558-235-11	(TC-V710WR)...CORD (WITH CONNECTOR) (REMOTE IN)
CN702	*1-558-235-11	(TC-V710WR)...CORD (WITH CONNECTOR) (REMOTE OUT)

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
CN703	1-558-520-31	(TC-V710WR)...CORD (WITH CONNECTOR) 3P (SYNC)
CN703	*1-560-280-00	(TC-V710WR)...CONNECTOR PIN 3P
CT312	1-141-225-00	CAP, TUNING, TRIMMER
D101	1-806-968-11	DIODE (LED BLOCK)
D102	1-806-967-11	DIODE (LED BLOCK)
D201	1-806-968-11	DIODE (LED BLOCK)
D202	1-806-967-11	DIODE (LED BLOCK)
D301	8-719-107-94	DIODE 1SS202-1
D302	8-719-107-94	DIODE 1SS202-1
D303	8-719-200-02	DIODE 10E2
D304	8-719-200-02	DIODE 10E2
D305	8-719-200-02	DIODE 10E2
D306	8-719-200-02	DIODE 10E2
D307	8-719-910-61	DIODE HZ6A1L
D308	8-719-107-94	(TC-V710WR)...DIODE 1SS202-1
D309	8-719-910-68	DIODE HZ6C2L
D310	8-719-107-94	(TC-V710WR)...DIODE 1SS202-1
D312	8-719-200-02	DIODE 10E2
D313	8-719-107-94	DIODE 1SS202-1
D314	8-719-200-02	DIODE 10E2
D315	8-719-107-94	(TC-V710WR)...DIODE 1SS202-1
D316	8-719-200-02	DIODE 10E2
D317	8-719-107-94	DIODE 1SS202-1
D502	8-719-200-02	DIODE 10E2
D503	8-719-107-94	DIODE 1SS202-1
D504	8-719-107-94	DIODE 1SS202-1
D505	8-719-107-94	DIODE 1SS202-1
D506	8-719-107-94	DIODE 1SS202-1
D507	8-719-107-94	DIODE 1SS202-1
D508	8-719-107-94	DIODE 1SS202-1
D509	8-719-107-94	DIODE 1SS202-1
D510	8-719-107-94	DIODE 1SS202-1
D513	8-719-107-94	(TC-V710WR)...DIODE 1SS202-1
D515	8-719-107-94	DIODE 1SS202-1
D516	8-719-107-94	DIODE 1SS202-1
D517	8-719-200-02	DIODE 10E2
D518	8-719-107-94	DIODE 1SS202-1
D519	8-719-107-94	DIODE 1SS202-1
D520	8-719-107-94	DIODE 1SS202-1
D521	8-719-107-94	DIODE 1SS202-1
D522	8-719-107-94	DIODE 1SS202-1
D523	8-719-107-94	DIODE 1SS202-1
D526	8-719-107-94	DIODE 1SS202-1
D527	8-719-107-94	DIODE 1SS202-1
D528	8-719-107-94	DIODE 1SS202-1
D529	8-719-107-94	DIODE 1SS202-1
D701	8-719-301-55	DIODE SEL2813A-C
D702	8-719-301-55	DIODE SEL2813A-C
D703	8-719-301-55	DIODE SEL2813A-C
D704	8-719-301-55	DIODE SEL2813A-C
D705	8-719-301-55	DIODE SEL2813A-C
D706	8-719-301-55	DIODE SEL2813A-C
D707	8-719-301-55	DIODE SEL2813A-C
D708	8-719-301-55	DIODE SEL2813A-C
D709	8-719-301-55	DIODE SEL2813A-C
D710	8-719-301-55	DIODE SEL2813A-C
D711	8-719-107-94	DIODE 1SS202-1

## ELECTRICAL PARTS

D712	8-719-107-94	DIODE 1SS202-1
D713	8-719-107-94	DIODE 1SS202-1
D714	8-719-107-94	DIODE 1SS202-1
D715	8-719-107-94	DIODE 1SS202-1
D716	8-719-107-94	DIODE 1SS202-1
D717	8-719-107-94	DIODE 1SS202-1
D718	8-719-107-94	DIODE 1SS202-1
D719	8-719-107-94	DIODE 1SS202-1
D720	8-719-107-94	DIODE 1SS202-1
D721	8-719-107-94	DIODE 1SS202-1
D722	8-719-107-94	DIODE 1SS202-1
D801	8-719-107-94	DIODE 1SS202-1
D802	8-719-107-94	DIODE 1SS202-1
D804	8-719-107-94	DIODE 1SS202-1
D805	8-719-938-43	(TC-V710WR)...DIODE BR3422S
D805	8-719-919-26	(TC-V70WR)...DIODE GL-9PR23
D806	8-719-938-43	(TC-V710WR)...DIODE BR3422S
D806	8-719-919-26	(TC-V70WR)...DIODE GL-9PR23
D808	8-719-918-96	(TC-V710WR)...DIODE AA3422S
D808	8-719-919-27	(TC-V70WR)...DIODE GL-9HY23
D809	8-719-107-94	DIODE 1SS202-1
D810	8-719-107-94	DIODE 1SS202-1
D811	8-719-107-94	DIODE 1SS202-1
D812	8-719-107-94	DIODE 1SS202-1
D813	8-719-107-94	DIODE 1SS202-1
D814	8-719-919-20	DIODE GL-9NG260
D815	8-719-918-67	DIODE GL-1EG102
D816	8-719-919-20	DIODE GL-9NG260
D817	8-719-936-63	DIODE GL-9ND002
D818	8-719-936-63	DIODE GL-9ND002
D819	8-719-918-67	DIODE GL-1EG102
D820	8-719-918-66	DIODE GL-1HY102
D821	8-719-919-30	DIODE BG3422S
F1	△1-532-259-00	FUSE, TIME-LAG (1.6A)
F2	△1-532-259-00	FUSE, TIME-LAG (1.6A)
F3	△1-532-078-00	(TC-V710WR:AEP)...FUSE, TIME LUG (1A)
F3	△1-532-259-00	(TC-V710WR:UK)...FUSE, TIME LUG (1.6A)
HP301	X-3391-102-1	(DECK A)...HEAD ASSY, ROTARY
HRP301	X-3391-123-1	(DECK B)...HEAD ASSY, ROTARY
IC101	8-759-912-79	IC IR2E02
IC201	8-759-912-79	IC IR2E02
IC301	8-759-145-58	IC UPC4558C
IC302	8-759-601-43	IC M4066BP
IC303	8-759-600-02	IC M5218L
IC304	8-759-601-43	IC M4066BP
IC305	8-759-602-01	IC M5220P
IC306	8-759-602-01	IC M5220P
IC307	8-752-018-70	IC CX20187
IC308	8-759-106-61	IC UPC4570HA
IC501	8-759-603-20	IC M50742-404SP
IC502	8-759-145-58	IC UPC4558C
IC503	8-759-602-47	IC M50761-417P
IC701	8-759-802-64	IC LM6416E-1979
J301	1-507-796-21	(TC-V710WR)...JACK (PHONES)
J302	1-507-908-11	JACK, PIN 4P

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

# TC-V70WR/V710WR

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
L101	1-408-929-00	MICRO INDUCTOR 27MMH
L102	1-408-924-00	MICRO INDUCTOR 10MMH
L103	1-408-924-00	MICRO INDUCTOR 10MMH
L201	1-408-929-00	MICRO INDUCTOR 27MMH
L202	1-408-924-00	MICRO INDUCTOR 10MMH
L203	1-408-924-00	MICRO INDUCTOR 10MMH
L501	1-407-173-XX	MICRO INDUCTOR 220UH
LPF101	1-231-388-00	FILTER, LOW PASS
LPF201	1-231-388-00	FILTER, LOW PASS
M501	X-3391-117-1	(DECK A)...MOTOR ASSY, CAPSTAN
M502	X-3391-118-1	(DECK A)...MOTOR ASSY, REEL
M503	X-3391-117-1	(DECK B)...MOTOR ASSY, CAPSTAN
M504	X-3391-118-1	(DECK B)...MOTOR ASSY, REEL
PM501	1-454-428-11	(DECK A)...SOLENOID, PLUNGER
PM502	1-454-428-11	(DECK B)...SOLENOID, PLUNGER
Q101	8-729-194-57	TRANSISTOR 2SC945-P
Q102	8-729-900-74	TRANSISTOR DTC143TS
Q103	8-729-194-57	TRANSISTOR 2SC945-P
Q104	8-729-194-57	TRANSISTOR 2SC945-P
Q105	8-729-194-57	TRANSISTOR 2SC945-P
Q106	8-729-194-57	TRANSISTOR 2SC945-P
Q107	8-729-194-57	TRANSISTOR 2SC945-P
Q201	8-729-194-57	TRANSISTOR 2SC945-P
Q202	8-729-900-74	TRANSISTOR DTC143TS
Q203	8-729-194-57	TRANSISTOR 2SC945-P
Q204	8-729-194-57	TRANSISTOR 2SC945-P
Q205	8-729-194-57	TRANSISTOR 2SC945-P
Q206	8-729-194-57	TRANSISTOR 2SC945-P
Q207	8-729-194-57	TRANSISTOR 2SC945-P
Q301	8-729-900-74	TRANSISTOR DTC143TS
Q302	8-729-194-57	TRANSISTOR 2SC945-P
Q303	8-729-194-57	TRANSISTOR 2SC945-P
Q304	8-729-178-54	TRANSISTOR 2SC2785
Q305	8-729-900-61	TRANSISTOR DTA114ES
Q306	8-729-178-54	TRANSISTOR 2SC2785
Q307	8-729-201-78	TRANSISTOR 2SD1406
Q308	8-729-178-54	TRANSISTOR 2SC2785
Q309	8-729-194-57	TRANSISTOR 2SC945-P
Q310	8-729-204-83	TRANSISTOR 2SA1048-GR
Q311	8-729-204-83	TRANSISTOR 2SA1048-GR
Q312	8-729-111-67	TRANSISTOR 2SB1094-L
Q313	8-729-201-78	TRANSISTOR 2SD1406-0
Q314	8-729-194-57	TRANSISTOR 2SC945-P
Q318	8-729-194-57	TRANSISTOR 2SC945-P
Q501	8-729-900-65	TRANSISTOR DTA144ES
Q502	8-729-900-89	TRANSISTOR DTC144ES
Q503	8-729-212-02	TRANSISTOR 2SC2120-Y
Q504	8-729-212-02	TRANSISTOR 2SC2120-Y
Q505	8-729-900-80	TRANSISTOR DTC114ES
Q506	8-729-103-43	TRANSISTOR 2SB734
Q507	8-729-900-65	TRANSISTOR DTA144ES
Q508	8-729-900-65	TRANSISTOR DTA144ES
Q509	8-729-103-43	TRANSISTOR 2SB734
Q510	8-729-212-02	TRANSISTOR 2SC2120-Y
Q511	8-729-212-02	TRANSISTOR 2SC2120-Y
Q512	8-729-205-02	TRANSISTOR 2SA1150
Q513	8-729-205-02	TRANSISTOR 2SA1150

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q514	8-729-212-02	TRANSISTOR 2SC2120-Y
Q515	8-729-103-43	TRANSISTOR 2SB734-4
Q516	8-729-212-02	TRANSISTOR 2SC2120-Y
Q517	8-729-212-02	TRANSISTOR 2SC2120-Y
Q518	8-729-205-02	TRANSISTOR 2SA1150
Q519	8-729-205-02	TRANSISTOR 2SA1150
Q520	8-729-900-74	TRANSISTOR DTC143TS
Q521	8-729-900-74	TRANSISTOR DTC143TS
Q522	8-729-900-74	TRANSISTOR DTC143TS
Q523	8-729-900-74	TRANSISTOR DTC143TS
Q524	8-729-900-61	TRANSISTOR DTA114ES
Q525	8-729-900-61	TRANSISTOR DTA114ES
Q526	8-729-900-61	TRANSISTOR DTA114ES
Q527	8-729-900-61	TRANSISTOR DTA114ES
Q528	8-729-900-61	TRANSISTOR DTA114ES
Q529	8-729-900-61	TRANSISTOR DTA114ES
Q530	8-729-900-74	TRANSISTOR DTC143TS
Q531	8-729-900-80	(TC-V70WR)...TRANSISTOR DTC114ES
Q533	8-729-900-74	TRANSISTOR DTC143TS
Q534	8-729-194-57	TRANSISTOR 2SC945-P
Q535	8-729-194-57	TRANSISTOR 2SC945-P
Q536	8-729-900-80	TRANSISTOR DTC114ES
Q538	8-729-194-57	TRANSISTOR 2SC945-P
Q539	8-729-900-89	TRANSISTOR DTC144ES
Q540	8-729-900-65	TRANSISTOR DTA144ES
Q541	8-729-900-65	TRANSISTOR DTA144ES
Q542	8-729-900-89	TRANSISTOR DTC144ES
Q543	8-729-900-65	TRANSISTOR DTA144ES
Q544	8-729-900-65	TRANSISTOR DTA144ES
Q545	8-729-900-65	TRANSISTOR DTA144ES
Q546	8-729-900-65	TRANSISTOR DTA144ES
Q547	8-729-900-65	TRANSISTOR DTA144ES
Q548	1-807-509-11	PHOTO SENSOR
Q549	1-807-509-11	PHOTO SENSOR
Q550	X-3391-124-1	(DECK B)... Q SENSOR ASSY
Q551	8-729-212-02	TRANSISTOR 2SC2120-Y
Q552	8-729-900-80	TRANSISTOR DTC114ES
Q554	8-729-900-80	TRANSISTOR DTC114ES
Q556	8-729-900-61	TRANSISTOR DTA114ES
Q558	8-729-204-83	TRANSISTOR 2SA1048-GR
Q559	8-729-900-61	TRANSISTOR DTA114ES
Q560	8-729-900-61	TRANSISTOR DTA114ES
Q561	8-729-900-61	TRANSISTOR DTA114ES
Q562	8-729-900-61	TRANSISTOR DTA114ES
Q564	8-729-900-61	TRANSISTOR DTA114ES
Q565	8-729-900-61	TRANSISTOR DTA114ES
Q566	8-729-900-80	TRANSISTOR DTC114ES
Q567	8-729-900-74	TRANSISTOR DTC143TS
Q568	8-729-900-74	(TC-V710WR)...TRANSISTOR DTC143TS
Q701	8-729-117-54	TRANSISTOR 2SA1175
Q702	8-729-117-54	TRANSISTOR 2SA1175
Q703	8-729-117-54	TRANSISTOR 2SA1175
Q704	8-729-117-54	TRANSISTOR 2SA1175
Q705	8-729-117-54	TRANSISTOR 2SA1175
Q706	8-729-271-02	TRANSISTOR 2SC2710
Q707	8-729-271-02	TRANSISTOR 2SC2710



## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R101	1-247-713-11	CARBON	1K	5%	1/4W
R102	1-247-167-00	CARBON	33K	5%	1/4W
R103	1-249-433-11	CARBON	22K	5%	1/6W
R104	1-247-843-00	CARBON	3.3K	5%	1/6W
R105	1-249-417-11	CARBON	1K	5%	1/6W
R106	1-247-851-00	CARBON	6.8K	5%	1/6W
R107	1-247-887-00	CARBON	220K	5%	1/6W
R108	1-247-717-11	CARBON	2.2K	5%	1/4W
R109	1-249-441-11	CARBON	100K	5%	1/6W
R112	1-249-441-11	CARBON	100K	5%	1/6W
R113	1-249-433-11	CARBON	22K	5%	1/6W
R114	1-249-429-11	CARBON	10K	5%	1/6W
R115	1-247-860-00	CARBON	16K	5%	1/6W
R116	1-247-857-00	CARBON	12K	5%	1/6W
R117	1-249-425-11	CARBON	4.7K	5%	1/6W
R118	1-249-435-11	CARBON	33K	5%	1/6W
R119	1-247-704-11	(TC-V710WR)...CARBON	220	5%	1/4W
R120	1-249-441-11	CARBON	100K	5%	1/6W
R121	1-249-433-11	CARBON	22K	5%	1/6W
R122	1-249-441-11	CARBON	100K	5%	1/6W
R123	1-249-441-11	CARBON	100K	5%	1/6W
R124	1-249-429-11	CARBON	10K	5%	1/6W
R125	1-249-429-11	CARBON	10K	5%	1/6W
R126	1-246-531-00	CARBON	270K	5%	1/4W
R127	1-247-700-11	CARBON	100	5%	1/4W
R128	1-246-524-00	CARBON	130K	5%	1/4W
R129	1-247-149-00	CARBON	5.6K	5%	1/4W
R130	1-247-857-00	CARBON	12K	5%	1/6W
R131	1-247-859-00	CARBON	15K	5%	1/6W
R132	1-247-887-00	CARBON	220K	5%	1/6W
R133	1-247-843-00	CARBON	3.3K	5%	1/6W
R135	1-247-887-00	CARBON	220K	5%	1/6W
R136	1-247-851-00	CARBON	6.8K	5%	1/6W
R137	1-249-417-11	CARBON	1K	5%	1/6W
R138	1-249-425-11	CARBON	4.7K	5%	1/6W
R140	1-246-531-00	CARBON	270K	5%	1/4W
R141	1-247-700-11	CARBON	100	5%	1/4W
R142	1-246-524-00	CARBON	130K	5%	1/4W
R143	1-247-149-00	CARBON	5.6K	5%	1/4W
R144	1-247-857-00	CARBON	12K	5%	1/6W
R145	1-247-887-00	CARBON	220K	5%	1/6W
R146	1-247-859-00	CARBON	15K	5%	1/6W
R149	1-249-441-11	CARBON	100K	5%	1/6W
R150	1-249-441-11	CARBON	100K	5%	1/6W
R152	1-247-843-00	CARBON	3.3K	5%	1/6W
R153	1-247-851-00	CARBON	6.8K	5%	1/6W
R154	1-247-822-00	CARBON	430	5%	1/6W
R155	1-247-846-00	CARBON	4.3K	5%	1/6W
R156	1-247-840-00	CARBON	2.4K	5%	1/6W
R157	1-247-851-00	CARBON	6.8K	5%	1/6W
R158	1-249-415-11	CARBON	680	5%	1/6W
R159	1-249-429-11	CARBON	10K	5%	1/6W
R161	1-249-421-11	CARBON	2.2K	5%	1/6W
R162	1-249-429-11	CARBON	10K	5%	1/6W
R163	1-249-417-11	CARBON	1K	5%	1/6W
R164	1-249-441-11	CARBON	100K	5%	1/6W
R165	1-249-421-11	CARBON	2.2K	5%	1/6W

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R166	1-247-887-00	CARBON	220K	5%	1/6W
R167	1-249-437-11	CARBON	47K	5%	1/6W
R168	1-249-437-11	CARBON	47K	5%	1/6W
R169	1-249-405-11	CARBON	100	5%	1/6W
R170	1-249-429-11	CARBON	10K	5%	1/6W
R171	1-249-422-11	CARBON	2.7K	5%	1/6W
R172	1-247-846-00	CARBON	4.3K	5%	1/6W
R173	1-249-421-11	CARBON	2.2K	5%	1/6W
R174	1-249-405-11	CARBON	100	5%	1/6W
R175	1-247-849-00	CARBON	5.6K	5%	1/6W
R176	1-249-417-11	CARBON	1K	5%	1/6W
R177	1-247-843-00	CARBON	3.3K	5%	1/6W
R178	1-249-417-11	CARBON	1K	5%	1/6W
R179	1-249-441-11	CARBON	100K	5%	1/6W
R180	1-249-425-11	CARBON	4.7K	5%	1/6W
R181	1-249-441-11	CARBON	100K	5%	1/6W
R182	1-249-425-11	CARBON	4.7K	5%	1/6W
R183	1-249-459-11	CARBON	12K	5%	1/4W
R201	1-247-713-11	CARBON	1K	5%	1/4W
R202	1-247-167-00	CARBON	33K	5%	1/4W
R203	1-249-433-11	CARBON	22K	5%	1/6W
R204	1-247-843-00	CARBON	3.3K	5%	1/6W
R205	1-249-417-11	CARBON	1K	5%	1/6W
R206	1-247-851-00	CARBON	6.8K	5%	1/6W
R207	1-247-887-00	CARBON	220K	5%	1/6W
R208	1-247-717-11	CARBON	2.2K	5%	1/4W
R209	1-249-441-11	CARBON	100K	5%	1/6W
R212	1-249-441-11	CARBON	100K	5%	1/6W
R213	1-249-433-11	CARBON	22K	5%	1/6W
R214	1-249-429-11	CARBON	10K	5%	1/6W
R215	1-247-860-00	CARBON	16K	5%	1/6W
R216	1-247-857-00	CARBON	12K	5%	1/6W
R217	1-249-425-11	CARBON	4.7K	5%	1/6W
R218	1-249-435-11	CARBON	33K	5%	1/6W
R219	1-247-704-11	CARBON	220	5%	1/4W
R220	1-249-441-11	CARBON	100K	5%	1/6W
R221	1-249-433-11	CARBON	22K	5%	1/6W
R222	1-249-441-11	CARBON	100K	5%	1/6W
R223	1-249-441-11	CARBON	100K	5%	1/6W
R224	1-249-429-11	CARBON	10K	5%	1/6W
R225	1-249-429-11	CARBON	10K	5%	1/6W
R226	1-246-531-00	CARBON	270K	5%	1/4W
R227	1-247-700-11	CARBON	100	5%	1/4W
R228	1-246-524-00	CARBON	130K	5%	1/4W
R229	1-247-149-00	CARBON	5.6K	5%	1/4W
R230	1-247-857-00	CARBON	12K	5%	1/6W
R231	1-247-859-00	CARBON	15K	5%	1/6W
R232	1-247-887-00	CARBON	220K	5%	1/6W
R233	1-247-843-00	CARBON	3.3K	5%	1/6W
R235	1-247-887-00	CARBON	220K	5%	1/6W
R236	1-247-851-00	CARBON	6.8K	5%	1/6W
R237	1-249-417-11	CARBON	1K	5%	1/6W
R238	1-249-425-11	CARBON	4.7K	5%	1/6W
R240	1-246-531-00	CARBON	270K	5%	1/4W
R241	1-247-700-11	CARBON	100	5%	1/4W
R242	1-246-524-00	CARBON	130K	5%	1/4W
R243	1-247-149-00	CARBON	5.6K	5%	1/4W

# TC-V70WR/V710WR

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R244	1-247-857-00	CARBON	12K	5%	1/6W
R245	1-247-887-00	CARBON	220K	5%	1/6W
R246	1-247-859-00	CARBON	15K	5%	1/6W
R249	1-249-441-11	CARBON	100K	5%	1/6W
R250	1-249-441-11	CARBON	100K	5%	1/6W
R252	1-247-843-00	CARBON	3.3K	5%	1/6W
R253	1-247-851-00	CARBON	6.8K	5%	1/6W
R254	1-247-822-00	CARBON	430	5%	1/6W
R255	1-247-846-00	CARBON	4.3K	5%	1/6W
R256	1-247-840-00	CARBON	2.4K	5%	1/6W
R257	1-247-851-00	CARBON	6.8K	5%	1/6W
R258	1-249-415-11	CARBON	680	5%	1/6W
R259	1-249-429-11	CARBON	10K	5%	1/6W
R261	1-249-421-11	CARBON	2.2K	5%	1/6W
R262	1-249-429-11	CARBON	10K	5%	1/6W
R263	1-249-417-11	CARBON	1K	5%	1/6W
R264	1-249-441-11	CARBON	100K	5%	1/6W
R265	1-249-421-11	CARBON	2.2K	5%	1/6W
R266	1-247-887-00	CARBON	220K	5%	1/6W
R267	1-249-437-11	CARBON	47K	5%	1/6W
R268	1-249-437-11	CARBON	47K	5%	1/6W
R269	1-249-405-11	CARBON	100	5%	1/6W
R270	1-249-429-11	CARBON	10K	5%	1/6W
R271	1-249-422-11	CARBON	2.7K	5%	1/6W
R272	1-247-846-00	CARBON	4.3K	5%	1/6W
R273	1-249-421-11	CARBON	2.2K	5%	1/6W
R274	1-249-405-11	CARBON	100	5%	1/6W
R275	1-247-849-00	CARBON	5.6K	5%	1/6W
R276	1-249-417-11	CARBON	1K	5%	1/6W
R277	1-247-843-00	CARBON	3.3K	5%	1/6W
R278	1-249-417-11	CARBON	1K	5%	1/6W
R279	1-249-441-11	CARBON	100K	5%	1/6W
R280	1-249-425-11	CARBON	4.7K	5%	1/6W
R281	1-249-441-11	CARBON	100K	5%	1/6W
R282	1-249-425-11	CARBON	4.7K	5%	1/6W
R283	1-249-459-11	CARBON	12K	5%	1/4W
R301	1-247-704-11	CARBON	220	5%	1/4W
R302	1-247-704-11	CARBON	220	5%	1/4W
R303	1-249-417-11	CARBON	1K	5%	1/6W
R304	1-247-704-11	CARBON	220	5%	1/4W
R305	1-247-704-11	CARBON	220	5%	1/4W
R306	1-249-437-11	CARBON	47K	5%	1/6W
R307	1-247-819-00	CARBON	330	5%	1/6W
R308	1-217-385-00	FUSIBLE	6.8	5%	1/4W F
R309	1-247-859-00	CARBON	15K	5%	1/6W
R310	1-247-859-00	CARBON	15K	5%	1/6W
R311	1-249-429-11	CARBON	10K	5%	1/6W
R312	1-247-859-00	CARBON	15K	5%	1/6W
R313	1-247-852-00	CARBON	7.5K	5%	1/6W
R314	1-249-422-11	CARBON	2.7K	5%	1/6W
R315	1-249-425-11	CARBON	4.7K	5%	1/6W
R316	1-247-859-00	CARBON	15K	5%	1/6W
R317	1-249-425-11	CARBON	4.7K	5%	1/6W
R318	1-214-777-00	METAL	100K	1%	1/4W
R319	1-247-133-00	CARBON	1.2K	5%	1/4W
R320	1-247-133-00	CARBON	1.2K	5%	1/4W
R321	1-247-704-11	CARBON	220	5%	1/4W

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R322	1-247-717-11	CARBON	2.2K	5%	1/4W
R323	1-247-717-11	CARBON	2.2K	5%	1/4W
R324	1-247-717-11	CARBON	2.2K	5%	1/4W
R325	1-247-717-11	CARBON	2.2K	5%	1/4W
R326	1-247-717-11	CARBON	2.2K	5%	1/4W
R327	1-247-713-11	CARBON	1K	5%	1/4W
R328	1-247-717-11	CARBON	2.2K	5%	1/4W
R329	1-247-725-11	(TC-V710WR)...CARBON	10K	5%	1/4W
R330	1-247-717-11	CARBON	2.2K	5%	1/4W
R331	1-249-429-11	CARBON	10K	5%	1/6W
R332	1-249-405-11	(TC-V710WR)...CARBON	100	5%	1/6W
R334	1-247-837-00	CARBON	1.8K	5%	1/6W
R335	1-249-421-11	CARBON	2.2K	5%	1/6W
R336	1-249-417-11	CARBON	1K	5%	1/6W
R337	1-249-429-11	CARBON	10K	5%	1/6W
R338	1-249-417-11	CARBON	1K	5%	1/6W
R339	1-249-429-11	CARBON	10K	5%	1/6W
R340	1-247-817-00	CARBON	270	5%	1/6W
R341	1-249-437-11	CARBON	47K	5%	1/6W
R342	1-249-425-11	CARBON	4.7K	5%	1/6W
R343	1-249-437-11	CARBON	47K	5%	1/6W
R344	1-249-417-11	CARBON	1K	5%	1/6W
R345	1-249-425-11	CARBON	4.7K	5%	1/6W
R346	1-249-441-11	CARBON	100K	5%	1/6W
R347	1-247-887-00	CARBON	220K	5%	1/6W
R348	1-249-425-11	CARBON	4.7K	5%	1/6W
R349	1-249-441-11	CARBON	100K	5%	1/6W
R350	1-213-036-00	(TC-V710WR)...FUSIBLE	1	5%	1W F
R351	1-213-036-00	(TC-V710WR)...FUSIBLE	1	5%	1W F
R352	1-247-833-00	CARBON	1.2K	5%	1/6W
R353	1-247-851-00	(TC-V710WR)...CARBON	6.8K	5%	1/6W
R354	1-249-441-11	CARBON	100K	5%	1/6W
R355	1-247-843-00	CARBON	3.3K	5%	1/6W
R501	1-249-429-11	CARBON	10K	5%	1/6W
R503	1-247-833-00	CARBON	1.2K	5%	1/6W
R504	1-247-833-00	CARBON	1.2K	5%	1/6W
R506	1-249-421-11	CARBON	2.2K	5%	1/6W
R507	1-249-429-11	CARBON	10K	5%	1/6W
R508	1-247-859-00	CARBON	15K	5%	1/6W
R509	1-247-859-00	CARBON	15K	5%	1/6W
R510	1-247-859-00	CARBON	15K	5%	1/6W
R511	1-247-859-00	CARBON	15K	5%	1/6W
R513	1-247-833-00	CARBON	1.2K	5%	1/6W
R514	1-247-837-00	CARBON	1.8K	5%	1/6W
R515	1-249-414-11	CARBON	560	5%	1/6W
R516	1-247-833-00	CARBON	1.2K	5%	1/6W
R517	1-247-833-00	CARBON	1.2K	5%	1/6W
R518	1-247-833-00	CARBON	1.2K	5%	1/6W
R519	1-247-833-00	CARBON	1.2K	5%	1/6W
R520	1-247-833-00	CARBON	1.2K	5%	1/6W
R521	1-247-837-00	CARBON	1.8K	5%	1/6W
R522	1-249-414-11	CARBON	560	5%	1/6W
R523	1-247-833-00	CARBON	1.2K	5%	1/6W
R524	1-247-833-00	CARBON	1.2K	5%	1/6W
R525	1-247-833-00	CARBON	1.2K	5%	1/6W
R526	1-247-833-00	CARBON	1.2K	5%	1/6W
R527	1-247-405-11	CARBON	100	5%	1/6W

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## ELECTRICAL PARTS

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R529	1-247-405-11	CARBON	100	5%	1/6W
R530	1-247-811-00	CARBON	150	5%	1/6W
R531	1-247-795-00	CARBON	33	5%	1/6W
R532	1-247-805-00	CARBON	82	5%	1/6W
R533	1-247-795-00	CARBON	33	5%	1/6W
R534	1-249-405-11	CARBON	100	5%	1/6W
R535	1-247-795-00	CARBON	33	5%	1/6W
R536	1-247-805-00	CARBON	82	5%	1/6W
R537	1-249-405-11	CARBON	100	5%	1/6W
R538	1-247-795-00	CARBON	33	5%	1/6W
R539	1-249-405-11	CARBON	100	5%	1/6W
R540	1-249-429-11	CARBON	10K	5%	1/6W
R541	1-249-421-11	CARBON	2.2K	5%	1/6W
R542	1-249-421-11	CARBON	2.2K	5%	1/6W
R543	1-249-421-11	CARBON	2.2K	5%	1/6W
R544	1-249-421-11	CARBON	2.2K	5%	1/6W
R545	1-249-421-11	CARBON	2.2K	5%	1/6W
R546	1-249-421-11	CARBON	2.2K	5%	1/6W
R547	1-249-421-11	CARBON	2.2K	5%	1/6W
R548	1-249-421-11	CARBON	2.2K	5%	1/6W
R549	1-249-405-11	CARBON	100	5%	1/6W
R551	1-249-429-11	(TC-V70WR)...CARBON	10K	5%	1/6W
R553	1-249-425-11	CARBON	4.7K	5%	1/6W
R554	1-249-417-11	(TC-V710WR)...CARBON	1K	5%	1/6W
R555	1-249-417-11	CARBON	1K	5%	1/6W
R556	1-249-441-11	CARBON	100K	5%	1/6W
R557	1-249-434-11	CARBON	27K	5%	1/6W
R558	1-249-429-11	CARBON	10K	5%	1/6W
R559	1-247-815-00	CARBON	220	5%	1/6W
R560	1-249-441-11	CARBON	100K	5%	1/6W
R561	1-249-429-11	CARBON	10K	5%	1/6W
R562	1-249-417-11	CARBON	1K	5%	1/6W
R563	1-247-704-11	CARBON	220	5%	1/4W
R564	1-249-429-11	CARBON	10K	5%	1/6W
R566	1-249-441-11	CARBON	100K	5%	1/6W
R567	1-249-441-11	CARBON	100K	5%	1/6W
R568	1-249-429-11	CARBON	10K	5%	1/6W
R569	1-249-421-11	CARBON	2.2K	5%	1/6W
R570	1-249-441-11	CARBON	100K	5%	1/6W
R571	1-247-843-00	CARBON	3.3K	5%	1/6W
R572	1-249-441-11	CARBON	100K	5%	1/6W
R574	1-249-429-11	CARBON	10K	5%	1/6W
R575	1-247-853-00	CARBON	8.2K	5%	1/6W
R576	1-247-837-00	CARBON	1.8K	5%	1/6W
R577	1-249-441-11	CARBON	100K	5%	1/6W
R578	1-249-417-11	CARBON	1K	5%	1/6W
R579	1-249-441-11	CARBON	100K	5%	1/6W
R580	1-249-429-11	CARBON	10K	5%	1/6W
R581	1-247-873-00	(TC-V710WR)...CARBON	56K	5%	1/6W
R581	1-249-441-11	(TC-V70WR)...CARBON	100K	5%	1/6W
R582	1-249-417-11	CARBON	1K	5%	1/6W
R583	1-249-429-11	CARBON	10K	5%	1/6W
R584	1-247-873-00	(TC-V70WR)...CARBON	56K	5%	1/6W
R584	1-249-437-11	(TC-V710WR)...CARBON	47K	5%	1/6W
R585	1-249-441-11	CARBON	100K	5%	1/6W
R586	1-247-857-00	CARBON	12K	5%	1/6W
R587	1-249-432-11	CARBON	18K	5%	1/6W

Ref.No.	Part No.	Description			
R588	1-249-405-11	CARBON	100	5%	1/6W
R589	1-249-433-11	CARBON	22K	5%	1/6W
R590	1-247-783-00	CARBON	10	5%	1/6W
R591	1-249-417-11	CARBON	1K	5%	1/6W
R593	1-249-429-11	CARBON	10K	5%	1/6W
R594	1-249-429-11	CARBON	10K	5%	1/6W
R595	1-249-441-11	CARBON	100K	5%	1/6W
R596	1-249-441-11	CARBON	100K	5%	1/6W
R597	1-249-441-11	CARBON	100K	5%	1/6W
R598	1-249-441-11	CARBON	100K	5%	1/6W
R599	1-247-783-00	CARBON	10	5%	1/6W
R600	1-247-783-00	CARBON	10	5%	1/6W
R601	1-247-783-00	CARBON	10	5%	1/6W
R602	1-247-783-00	CARBON	10	5%	1/6W
R603	1-249-441-11	CARBON	100K	5%	1/6W
R604	1-249-441-11	CARBON	100K	5%	1/6W
R605	1-249-441-11	CARBON	100K	5%	1/6W
R606	1-249-441-11	CARBON	100K	5%	1/6W
R607	1-249-441-11	CARBON	100K	5%	1/6W
R608	1-247-903-00	CARBON	1M	5%	1/6W
R609	1-249-429-11	CARBON	10K	5%	1/6W
R610	1-249-421-11	CARBON	2.2K	5%	1/6W
R611	1-249-429-11	CARBON	10K	5%	1/6W
R613	1-249-417-11	CARBON	1K	5%	1/6W
R614	1-249-417-11	CARBON	1K	5%	1/6W
R615	1-249-429-11	CARBON	10K	5%	1/6W
R616	1-249-429-11	CARBON	10K	5%	1/6W
R621	1-249-434-11	CARBON	27K	5%	1/6W
R622	1-249-417-11	CARBON	1K	5%	1/6W
R623	1-249-417-11	CARBON	1K	5%	1/6W
R624	1-249-417-11	CARBON	1K	5%	1/6W
R625	1-249-417-11	CARBON	1K	5%	1/6W
R626	1-249-405-11	(TC-V70WR)...CARBON	100	5%	1/6W
R627	1-247-815-00	CARBON	220	5%	1/6W
R628	1-249-421-11	CARBON	2.2K	5%	1/6W
R629	1-249-441-11	CARBON	100K	5%	1/6W
R634	1-206-467-00	METAL OXIDE	15	5%	2W F
R635	1-247-903-00	CARBON	1M	5%	1/6W
R636	1-249-422-11	CARBON	2.7K	5%	1/6W
R637	1-249-417-11	CARBON	1K	5%	1/6W
R639	1-249-405-11	CARBON	100	5%	1/6W
R640	1-249-405-11	CARBON	100	5%	1/6W
R701	1-249-421-11	CARBON	2.2K	5%	1/6W
R702	1-249-421-11	CARBON	2.2K	5%	1/6W
R703	1-249-437-11	CARBON	47K	5%	1/6W
R704	1-249-437-11	CARBON	47K	5%	1/6W
R705	1-249-437-11	CARBON	47K	5%	1/6W
R706	1-249-437-11	CARBON	47K	5%	1/6W
R707	1-249-437-11	CARBON	47K	5%	1/6W
R708	1-249-437-11	CARBON	47K	5%	1/6W
R709	1-249-421-11	CARBON	2.2K	5%	1/6W
R710	1-249-421-11	CARBON	2.2K	5%	1/6W
R711	1-249-421-11	CARBON	2.2K	5%	1/6W
R712	1-249-421-11	CARBON	2.2K	5%	1/6W
R713	1-249-421-11	CARBON	2.2K	5%	1/6W
R714	1-249-405-11	CARBON	100	5%	1/6W
R715	1-249-405-11	CARBON	100	5%	1/6W

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

# TC-V70WR/V710WR

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
R716	1-249-405-11	CARBON 100 5% 1/6W
R717	1-249-405-11	CARBON 100 5% 1/6W
R718	1-249-405-11	CARBON 100 5% 1/6W
R719	1-249-405-11	CARBON 100 5% 1/6W
R720	1-249-405-11	CARBON 100 5% 1/6W
R721	1-249-405-11	CARBON 100 5% 1/6W
R722	1-249-405-11	CARBON 100 5% 1/6W
R723	1-249-405-11	CARBON 100 5% 1/6W
R724	1-247-903-00	CARBON 1M 5% 1/6W
R725	1-249-441-11	CARBON 100K 5% 1/6W
R726	1-249-425-11	CARBON 4.7K 5% 1/6W
R727	1-249-441-11	CARBON 100K 5% 1/6W
R728	1-249-441-11	CARBON 100K 5% 1/6W
R729	1-247-903-00	CARBON 1M 5% 1/6W
R730	1-247-903-00	CARBON 1M 5% 1/6W
RV101	1-237-204-11	RES, VAR, SLIDE 20K (REC LEVEL L)
RV102	1-228-994-00	RES, ADJ, CARBON 10K
RV103	1-228-994-00	RES, ADJ, CARBON 10K
RV104	1-228-994-00	RES, ADJ, CARBON 10K
RV201	1-237-204-11	RES, VAR, SLIDE 20K (REC LEVEL R)
RV202	1-228-994-00	RES, ADJ, CARBON 10K
RV203	1-228-994-00	RES, ADJ, CARBON 10K
RV204	1-228-994-00	RES, ADJ, CARBON 10K
RV501	1-228-995-00	RES, ADJ, CARBON 22K
RV502	1-228-995-00	RES, ADJ, CARBON 22K
RV503	1-228-995-00	RES, ADJ, CARBON 22K
RV504	1-228-995-00	RES, ADJ, CARBON 22K
RV505	1-228-995-00	RES, ADJ, CARBON 22K
RY301	1-515-547-11	RELAY
S301	1-570-499-11	SWITCH, PUSH (3 KEY)(MODE)
S302	1-554-168-00	SWITCH, SLIDE (DOLBY NR)
S303	△ 1-570-103-21	(TC-V710WR)..SWITCH, PUSH(1 KEY)(POWER)
S501	1-570-720-11	SWITCH, PUSH (1 KEY)
S502	1-570-720-11	SWITCH, PUSH (1 KEY)
S503	1-570-719-11	(DECK A)...SWITCH, LEAF
S504	1-570-721-11	(DECK B)...SWITCH, LEAF
S505	1-570-722-11	SWITCH, PUSH (1 KEY)
S506	1-570-720-11	SWITCH, PUSH (1 KEY)
S507	1-570-720-11	SWITCH, PUSH (1 KEY)
S508	1-570-719-11	(DECK A)...SWITCH, LEAF
S509	1-570-721-11	(DECK B)...SWITCH, LEAF
S519	1-554-168-00	SWITCH, SLIDE (TIMER)
S520	1-554-168-00	SWITCH, SLIDE (DIRECTION MODE)
S701	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/1)
S702	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/2)
S703	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/3)
S704	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/4)
S705	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/5)
S706	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/6)
S707	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/7)
S708	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/8)
S709	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/9)
S710	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (RMS/10)
S711	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (CLEAR)
S712	1-553-856-00	(TC-V710WR)...SWITCH, KEY BOARD (CHECK)

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
S801	1-553-856-00	SWITCH, KEY BOARD (NORMAL SPEED)
S802	1-553-856-00	SWITCH, KEY BOARD (HIGH SPEED)
S804	1-553-856-00	SWITCH, KEY BOARD (AUTO PAUSE)
S805	1-553-856-00	SWITCH, KEY BOARD (A/REW)
S806	1-553-856-00	SWITCH, KEY BOARD (A/REV)
S807	1-553-856-00	SWITCH, KEY BOARD (A/STOP)
S808	1-553-856-00	SWITCH, KEY BOARD (A/FWD)
S809	1-553-856-00	SWITCH, KEY BOARD (A/FF)
S810	1-553-856-00	SWITCH, KEY BOARD (B/REW)
S811	1-553-856-00	SWITCH, KEY BOARD (B/REV)
S812	1-553-856-00	SWITCH, KEY BOARD (B/STOP)
S813	1-553-856-00	SWITCH, KEY BOARD (B/FWD)
S814	1-553-856-00	SWITCH, KEY BOARD (B/FF)
S815	1-553-856-00	SWITCH, KEY BOARD (B/REC)
S816	1-553-856-00	SWITCH, KEY BOARD (B/PAUSE)
S817	1-553-856-00	SWITCH, KEY BOARD (B/REL MUTE)
S818	1-553-856-00	SWITCH, KEY BOARD (AMS/BS)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T1	△ 1-448-377-11	(TC-V710WR:AEP)...TRANSFORMER, POWER
T1	△ 1-448-378-11	(TC-V710WR:E).....TRANSFORMER, POWER
T301	1-433-308-11	TRANSFORMER, BIAS OSCILLATION
TP-CLOUSE*	1-564-505-11	PLUG, CONNECTOR 2P
TP-MT	*1-564-505-11	PLUG, CONNECTOR 2P
TP-X2	*1-564-505-11	PLUG, CONNECTOR 2P
X501	1-527-802-00	OSCILLATOR, CERAMIC, 3.58MHz
X502	1-527-532-00	OSCILLATOR, CERAMIC, 400kHz
VS1	△ 1-570-307-11	(TC-V710WR:E)...SWITCH, VOLTAGE CHANGE

## ACCESSORY & PACKING MATERIAL

Part No.	Description
1-551-734-11	(TC-V710WR)...CORD, CONNECTION (RK-74A)
1-558-233-11	(TC-V710WR)...CORD(WITH CONNECTOR)(SIRCS)4P
3-312-970-00	(TC-V70WR)...SHEET, PROTECTION
3-312-976-00	(TC-V710WR)...SHEET, PROTECTION, PANEL
3-325-013-01	(TC-V70WR)...CUSHION
3-329-931-31	(TC-V710WR:E).....INDIVIDUAL CARTON
3-329-931-41	(TC-V710WR:AEP,UK)...INDIVIDUAL CARTON
*3-329-932-01	(TC-V710WR)...CUSHION (LEFT), UPPER
*3-329-933-01	(TC-V710WR)...CUSHION (LEFT), LOWER
*3-329-934-01	(TC-V710WR)...CUSHION (RIGHT), LOWER
*3-329-935-01	(TC-V710WR)...CUSHION (RIGHT), UPPER
3-701-630-00	(TC-V710WR)...BAG, POLYETHYLENE
3-765-151-11	(TC-V710WR).....MANUAL, INSTRUCTION
3-765-151-41	(TC-V710WR:AEP)...MANUAL, INSTRUCTION
4-605-140-01	(TC-V710WR)...SHEET, PROTECTION

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

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Sony Corporation

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